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German Schools and Pedagogy.

ORGANIZATION AND INSTRUCTION

OF

COMMON SCHOOLS IN GERMANY,

WITH THE

VIEWS OF GERMAN TEACHERS AND EDUCATORS,

ON

ELEMENTARY INSTRUCTION.

REPUBLISHED FROM

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INTRODUCTION.

As a starting point in an account of the system of Public Instruction in the different states of Germany, as set forth in the following Papers selected from Barnard's "*American Journal of Education*," we introduce a portion of a chapter from Raumer's "*Pedagogics*," on the early School Code of Wirtemberg and Saxony.

The Wirtemberg code, to which we shall first advert, is to be found incorporated in the Grand Ecclesiastical Order, so-called, issued in the year 1559, by Duke Christopher, and, after receiving the formal sanction of the assembled states at the Diet of 1565, accepted as an integral part of the constitution of the government, and approved by successive revisions at different periods, as in 1582, 1660, etc. In the preamble to this code, its purpose is stated as follows: "To carry youth from the elements through successive grades to the degree of culture demanded for offices in the church and in the state."

TEUTSCH (GERMAN) SCHOOLS.

The "*Teutsch*" schools formed the lowest grade, in which boys and girls, separate from each other, received instruction in reading, writing, religion, and sacred music. Arithmetic was left out of the account here; although afterward we find it required of the schoolmaster, that he be "of a good understanding to teach both reading and figures." In the matter of discipline, the master was cautioned "to use the rod on all proper occasions, but never to seize the children by the hair, etc." And in order that the service of the school might wholly engage the attention of the teacher, "wherever any sacristan is now required to do beadle and mass service, for the future he may be released therefrom."

Such "*Teutsch*" schools, moreover, were to be set up "in the little villages and hamlets," where there were no higher institutions in existence; but, together with these, "in each and every city, large or small, as well as in the principal villages or hamlets, Latin schools likewise were to be founded." These last were also called private schools.

LATIN SCHOOLS.

A fully equipped Latin school was to include, according to the code of Duke Christopher, five classes, to which Duke Louis added a sixth. This number, however, in thinly settled hamlets, was reduced, so that in some instances we find but one class in a school.

Where the classes were sufficiently full, they were to be divided into *decuriæ;* and each *decuria*, as in the school of Sturm, had its *decurion*, elected weekly, whose duty it was to take the general "oversight of his comrades."

The lowest class was called *Prima.* The boys in this class learned to read Latin. The teachers were particularly admonished to require the boys "to pronounce the vowels and consonants in a clear and distinct manner, and according to the usage of the Latin language rather than that of the vernacular." Those who, "from natural backwardness, are unable to pronounce all the letters, should be, as much as possible, practiced upon words of a smooth and gliding accent." The paradigms of the etymology were taught, Cato read, and two Latin words, taken from the *Nomenclatura rerum*, were daily assigned to each scholar, to copy and commit to memory.

Second Class.—In this, Cato and the "*Mimi Publiani*" were expounded, word by word, and the declensions and conjugations were continued; "with the other parts of speech (*i. e.*, other than nouns substantive and adjective, and verbs,) the boys in the lower *decuria* were not to be perplexed;" but, in the upper *decuriæ*, all the parts of speech were to be learned, syntax begun, and translations made from the Latin catechism. Moreover, the preceptor was enjoined to "question and drill the boys in phrases," to see how they would express this or that particular phrase in Latin; for at this point Latin conversation was the chief subject of attention. Exercises in music were likewise required.

Third Class.—In this class, lessons were recited from the "Fables of Camerarius" and the "Dialogues of Cattalio," and "fine phrases were pointed out therein," for the boys "to put to use, both in writing and in speech." They were likewise introduced to the "choice epistles of Cicero," and to Terence. The latter was to be committed to memory. "And, since Terence wrote with great elegance and purity, the boys should read over his expressions often, and that attentively, and should also turn them into good German, 'that so their own Latin, both written and colloquial, may be improved.'" At the reading of Terence, the teachers "should be specially careful to give prominence to the design and purpose of the author, how he does not himself advocate every thing that is said, but depicts various vices and dispositions in the person of his various characters; for instance, where *Mitio* says—'*Non est flagitium* (*crede mihi*) *adolescentem scortari*, *neque potare*, *neque fores effringere*,' etc.; here the boys are to understand that these words do not express the real sentiments of the writer." "Again, these and the like passages should be used by the preceptor, to show how those benighted pagans knew nothing of God and his word; in short, a diligent care should be exercised, on all occasions, that the tender minds of the young receive no evil bias."

Syntax was then taken up, combined with "exercises in style;" and in these the pupil was instructed "to imitate the periods of authors, gleaned from suitable readings." Patience and perseverance were especially commended to teachers, in their corrections of the written essays of their scholars.

Fourth Class.—Cicero's "Letters to his Friends," the treatises on "Friendship," and on "Old Age," and Terence were read in this class. After finishing syntax, the elements of prosody were taken up. Also the rudiments of Greek grammar were learned, and translations made from the smaller Greek catechism of Brentius.

Fifth Class.—Those boys who, while passing through the four first classes, "had been sufficiently exercised and perfected in grammar, so that they spoke Latin with tolerable freedom, and had besides mastered the elements of Greek," were in this class to be confirmed "in all the studies to which they had previously attended."

They were then to read Cicero's "Fæmilias Letters," and his "Offices," also Ovid "de Tristibus," the Gospels in Greek and in Latin, and, in addition, to give their attention to prosody and to exercises in style.

Sixth Class.—"After the boys have been thoroughly drilled in grammar, they are in this class to be made acquainted with logic and rhetoric." They were to read, beside Cicero's Speeches and Sallust, the Æneid of Virgil, "that they may thereby grow accustomed to the elegancies of the Latin tongue, and to a pure, poetical diction."

In their exercises in style, "regard should be paid not to the quantity but the quality of their compositions, and to their successful imitation of the idiom and the phraseology of Cicero."

In Greek, they were to go through with the grammar, and to read the Cyropædia and the larger catechism of Brentius.

Music, especially sacred, both in German and Latin words, was thoroughly practiced by all the classes, and the recitations of the day were always introduced with the singing of the "*Veni sancte Spiritus*," or the "*Veni Creator Spiritus*."

The boys were also obliged, "as well out of as in school, to converse with each other in Latin, not in German," and "every week to write 'letters.'"

A comparison of the Wirtemberg school code with that of Sturm reveals a most surprising similarity between them both, in their respective aims, as well as in the means by which in each case that aim was reached. The Wirtemberg boys were required to be "devout, God-fearing, modest, and obedient, and to be faithful in attendance on school and in study." Teachers were repeatedly cautioned against too great severity, especially in the infliction of corporeal punishment.

THE CLOISTER SCHOOLS.

Duke Christopher's chief care was to provide his people with good spiritual guides. For the education of such, he founded, in the year 1556, cloister schools, so-called, upon the endowments of the disfranchised monasteries, so that these might be, according to their original design, again enlisted in the service of the church. At an annual examination held by authority at Stuttgart, the most promising boys, of twelve or fourteen years of age, at the Latin schools, were transferred to the cloister schools, and there educated without charge, until they were fitted to enter the University of Tubingen. At their entrance into the cloister schools, the promise was exacted of them, to continue faithfully in the study of theology, and, except under permission from the duke, never to engage in any foreign service. The "*Church Order*" divided the cloister schools into lower and higher; the former were also styled grammar schools. Boys went, as we have stated above, in their twelfth or fourteenth year, from the Latin school, into the cloister grammar school. They were obliged, beforehand, to have completed the studies of the third class; for in the cloister school they received nearly the same instruction that was imparted in the fifth and the sixth of the Latin schools. To this there was, moreover, added much theological doctrine, bearing upon their future course.

From the grammar schools, they went up into the higher cloister schools. Here they read Cicero, Virgil, and Demosthenes, and took up Greek grammar; they also continued logic and rhetoric, and practiced singing, in connection with the study of a compendium of musical science. Up to this point, they were wholly upon old ground. But now, other and new branches demanded their attention; viz., arithmetic and astronomy, the latter most probably taught out of the "*Sphere of Sacro Bosco.*"

Meanwhile, frequent exercises in style were insisted on, in order "to attain to the purity and elegance of the Latin tongue." Some short collection of phrases was to be learned by heart, and reference "should be freely made to the 'Phrases out of Cicero and Terence, collected by certain scholars, and now first put into print.'" The preceptor "should himself, with such phrases as he had collected in his reading during the week, compose a Latin treatise, inventing his argument in such a manner, that well-considered phrases may be fitly woven into its expression; for he ought, by all means, to avoid affectation, and to use embellishments only where they grow out of the subject. Such treatises he should translate into good German, and dictate the same to the boys, bidding them turn it again into pure and elegant Latin, for which purpose he may remind them to use their own common-place books, already prepared of words and phrases from Cicero, Terence, Virgil, and other good authors. The preceptor must "strike out every phrase which is not sanctioned by some approved author," .... "and at last he should read over to the boys the Latin treatise which he has himself already prepared from the same phrases, and they should listen attentively, in order to see how skillfully the preceptor has joined these phrases together; that they may learn how to follow his lead, and attain to his excellence."

Every where we find the same grand aim; *i. e.*, imitation of classical authors. And those earlier scholars fancied themselves genuine imitators and pure classical writers, when they had merely put together, with great care and pains, phrases borrowed from the classics. That they did not learn from the classics, as did Wieland, how to write German well, is sufficiently evident from the composition of the foregoing citations.*

Every two weeks, disputations were to be held upon questions of grammar, logic, rhetoric, or the sphere, ("*Sphœrica lectio.*")

The discipline of these cloister schools was the more strict, inasmuch as more was demanded of boys who were destined for the clerical office.

UNIVERSITY.

When the cloister scholars had reached the age of 16 or 17, they entered the university. They were first examined; and those who had passed a good examination were admitted to the Tubingen Foundation, and, during their entire university course, received a gratuitous maintenance. And here, too, they were subjected to a strict discipline. Besides their particular department of theology, they paid special attention to Hebrew, Greek, and Latin, prosecuted logic, rhetoric, and mathematics more thoroughly, and were kept at exercises in style, together with disputations. The Foundation was sufficiently ample for the support of one hundred and fifty students. Its privileges however were extended only to native-born Wirtembergers, who were destined for the sacred office.

---

* Take for instance the following: "Kein phrasin die nicht ex probato authore herkommen passiren lassen."

Such was the Wirtemberg school system, beginning in the "*Teutsch*" or elementary schools, and ending in the university.

I. PRIMARY EDUCATION IN GERMANY.

HISTORICAL DEVELOPMENT.

To Germany,[*] as a whole, as one people, and not to any particular state of Germany, as now recognized on the map of Europe, belongs the credit of first thoroughly organizing a system of public education under the administration of the civil power. Here, too, education first assumed the form and name of a science, and the art of teaching and training children was first taught systematically in seminaries established for this special purpose.

But not to Germany, or to any one people or any civil authority any where, but to the Christian Church, belongs the higher credit of first instituting the public school, or rather the parochial school, for the elementary education of the poor, which was the earliest form which this mighty element of modern society assumed. After the third century of the Christian era, whenever a Christian church was planted, or religious institutions established, there it was the aim of the higher ecclesiastical authorities to found, in some form, a school for the nurture of children and youth for the service of religion and duties of society. Passing by the ecclesiastical and catechetical schools, we find, as early as 529, the council of Vaison strongly recommending the establishment of village schools. In 800 a synod at Mayence ordered that the parochial priests should have schools in the towns and villages, that the little children of all the faithful might learn letters from them; "let them receive and teach these with the utmost charity, that they themselves may shine as the stars for ever. Let them receive no remuneration from their scholars, unless what the parents through charity may voluntarily offer." A council at Rome, in 836, under Eugene II., ordained that there should be three kinds of schools established throughout Christendom; episcopal, parochial in towns and villages, and others wherever there could be found place and opportunity. In 836, Lothaire I. promulgated a decree to establish eight public schools in some of the principal cities of Italy, "in order that opportunity may be given to all, and that there may be no excuse drawn from poverty and the difficulty of repairing to remote places." The third council of Lateran, in 1179, says: "Since the Church of God, as a pious mother, is bound to provide that opportunity for learning should not be withdrawn from the poor, who are without help from patrimonial riches, be it ordained, that in every cathedral there should be a master to teach both clerks and poor scholars gratis." This decree was enlarged and again enforced by Innocent III. in the year 1215. Hence, in all colleges of canons, one bore the title of the scholastic canon. The council of Lyons, in 1215, decreed "that in all cathedral churches, and others provided with adequate revenues, there should be established a school and a teacher by the bishop and chapter, who should teach the clerks and other poor scholars gratis in grammar, and for this purpose a stipend should be assigned him."*

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[*] Mr. W. E. Hickson, in his valuable pamphlet, entitled "*Dutch and German Schools,*" published in London in 1840, well says:

"We must bear in mind that the German states, although under different governments, are not nations as distinct from, and independent of each other, as France and Spain, or as Russia and Great Britain. Each of the German states is influenced more or less by every other; the whole lying in close juxta-position, and being linked together by the bond of a common language and literature. The boundary line that separates Prussia from Hesse on one side, or from Saxony on another, is not more defined than that of a county or parish in England. A stone in a field, or a post painted with stripes, in a public road, informs the traveler that he is passing from one state into another, that these territorial divisions make no change in the great characteristics of the people: whatever the name of the state, or the color of the stripes, the people, with merely provincial differences, are the same: from the Baltic to the Adriatic, they are still Germans. The national spirit may always be gathered from the national songs, and in Germany the most popular are those which speak of all Germans as brothers, and all German states as belonging to one common country, as may be gathered from the following passage of a song of M. Arndt:—

"What country does a German claim?
His Fatherland; know'st thou its name?
Is it Bavaria,—Saxony?
An inland state, or on the sea?
There, on the Baltic's plains of sand?
Or mid the Alps of Switzerland?
Austria, the Adriatic shores?
Or where the Prussian eagle soars?
Or where hills covered by the vine,
Adorn the landscape of the Rhine?
Oh no, oh no, not there, alone,
The land, with pride, we call our own,
Not there. A German's heart or mind
Is to no narrow realm confined.
Where'er he hears his native tongue,
When hymns of praise to God are sung,
There is his Fatherland, and he
Has but one country—Germany!"

Such was the origin of the popular school, as now generally understood—every where the offspring, and companion of the Church; sharing with her, in large measure, the imperfections which attach to all new institutions and all human instrumentalities; encountering peculiar difficulties from the barbarism of the age and people through which it passed, and which it was its mission to enlighten; and every where crippled by insufficient endowments, unqualified teachers, and the absence of all text books, and necessary aids to instruction and illustration. The discovery of the art of printing, in 1440, and the consequent multiplication of books at prices which brought them more within reach of the great mass of the people; the study and use of the vernacular language by scholars and divines, and particularly its employment in the printing of the Bible, hymns, popular songs, school books, and in religious instruction generally; the recognition by the municipal authorities of cities, and at a later period by the higher civil power, of the right, duty and interest of the state, in connection with, or independent of the church, to provide liberally and efficiently for the education of all children and youth; and above all, the intense activity given to the human mind by the religious movement of Luther, in the early part of the sixteenth century; the assertion of the right of private judgment in the interpretation of the scriptures; the breaking up of existing ecclesiastical foundations, and the diversion of funds from religious to educational purposes,—all these causes, combined with the general progress of society, co-operated to introduce an advantageous change in the organization, administration, instruction and discipline ot the popular school. But the progress actually made from year to year, and century even to century, was slow, and after three hundred years of effort, there is much yet to be done even in those states and communities which have accomplished the most toward improving the outward organization and instrumentalities of the schools, and above all its internal life in the improved qualification and position of the teachers—for as is the teacher, so is the school. A brief reference to a few of the more prominent names in the history of popular education in Germany, and through Germany, of Modern Europe, is all that can be attempted at this time and in this connection. Among these names stands prominent that of Martin Luther.

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* Digby's Mores Catholici.

In a letter to the Elector of Saxony, in the year 1526, Luther says:*

"Since we are all required, and especially the magistrates, above all other things, to educate the youth who are born and are growing up among us, and to train them up in the fear of God and in the ways of virtue, it is needful that we have schools and preachers and pastors. If the parents will not reform, they must go their way to ruin, but if the young are neglected, and left without education, it is the fault of the state; and the effect will be that the country will swarm with vile and lawless people, so that our safety, no less than the command of God requireth us to foresee and ward off the evil." He maintains in that letter that the government, "as the natural guardian of all the young," has the right to compel the people to support schools. "What is necessary to the well-being of a state, that should be supplied by those who enjoy the privilege of such state. Now nothing is more necessary than the training of those who are to come after us and bear rule. If the people are too poor to pay the expense, and are already burdened with taxes, then the monastic funds, which were originally given for such purposes, are to be employed in that way to relieve the people." The cloisters were abandoned in many cases, and the difficult question, what was to be done with their funds, Luther settled in this judicious manner. How nearly did he approach to the policy now so extensively adopted in this country, of supporting schools partly by taxation and partly by funds appropriated for that purpose.

In 1524 he wrote a remarkable production, entitled "An Address to the Common Councils of all the Cities of Germany in behalf of Christian Schools," from which a few passages may here be extracted. After some introductory remarks, he comes directly to his point, and says to his countrymen collectively:

"I entreat you, in God's behalf and that of the poor youth, not to think so lightly of this matter as many do. It is a grave and serious thing, affecting the interest of the kingdom of Christ, and of all the world, that we apply ourselves to the work of aiding and instructing the young. . . . . . . If so much be expended every year in weapons of war, roads, dams, and countless other things of the sort for the safety and prosperity of a city; why should not we expend as much for the benefit of the poor, ignorant youth, to provide them with skillful teachers? God hath verily visited us Germans in mercy and given us a truly golden year. For we now have accomplished and learned young men, adorned with a knowledge of literature and art, who could be of great service if employed to teach the young. . . .

Even if the parents were qualified, and were also inclined to teach, they have so much else to do in their business and household affairs that they can not find the time to educate their children. Thus there is a necessity that public teachers be provided. Otherwise each one would have to teach his own children, which would be for the common people too great a burden. Many a fine boy would be neglected on account of poverty; and many an orphan would suffer from the negligence of guardians. And those who have no children would not trouble themselves at all about the whole matter. Therefore it becometh rulers and magistrates to use the greatest care and diligence in respect to the education of the young.

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* The following extracts are taken from Dr. Sears' "*Life of Martin Luther*," published by the American Sunday School Union.

The diligent and pious teacher who properly instructeth and traineth the young, can never be fully rewarded with money. If I were to leave my office as preacher, I would next chose that of schoolmaster, or teacher of boys; for I know that, next to preaching, this is the greatest, best, and most useful vocation; and I am not quite sure which of the two is the better; for it is hard to reform old sinners, with whom the preacher has to do, while the young tree can be made to bend without breaking."

In 1527, a visitation was made of the churches and schools of the electorate of Saxony, in which more than thirty men were employed a whole year. The result in respect to education was, that the "Saxon school system," as it was called, was drawn up by the joint labors of Luther and Melancthon; and thus the foundation was laid for the magnificent organization of schools to which Germany owes so much of her present fame.

In a letter to Margrave George, of Bradenburg, July 18, 1529:—

"I will tell you what Melancthon and myself, upon mature consideration, think best to be done. First, we think the cloisters and foundations may continue to stand till their inmates die out. . . . . . Secondly, it would be exceedingly well to establish in one or two places in the principality a learned school, in which shall be taught, not only the Holy Scriptures, but law, and all the arts, from whence preachers, pastors, clerks, counselors, &c., may be taken for the whole principality. To this object should the income of the cloisters and other religious foundations be applied, so as to give an honorable support to learned men; two in theology, two in law, one in medicine, one in mathematics, and four or five for grammar, logic, rhetoric, &c. . . . . . Thirdly, in all the towns and villages, good schools for children should be established, from which those who are adapted to higher studies might be taken and trained up for the public."

Under these instructions and appeals a school law was adopted in Wirtemberg in 1559, and modified in 1565; in Saxony in 1560, and improved in 1580; in Hesse in 1565; and in Brandenberg, still earlier; which recognized and provided for the classification, inspection, and support of public schools on substantially the same plan which prevails to this day throughout Germany.

The pedagogical work of Luther—his labors to improve the method of instruction—were continued by Trotzendorf,* in Goldberg, from 1530 to 1556; by Sturm, in Strasbourg, from 1550 to 1589; by Neander, in Ilefeld, from 1570 to 1595, whose schools were all Normal Schools, in the original acceptation of the term, *pattern* or *model* schools, of their time. They were succeeded by Wolfgang Ratich, born at Wilster, in Holstein, in 1571; by Christopher Helwig, born near Frankfort, in 1581; and by Amos Comenius, born at Comna, in Moravia, in 1592; who all labored, by their writings, and by organizing schools and courses of instruction, to disseminate improved methods of teaching. Comenius was invited by an act of parliament in 1631, to visit England for the purpose of introducing his method into the public institutions of that country. But internal commotions interrupted and ultimately defeated his plans.

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* Trotzendorf practiced the monitorial system of instruction two hundred and fifty years before Dr. Bell or Joseph Lancaster set up their claims for its discovery.

In 1618, the religious war—known as the *Thirty Years'* war—broke out in Germany, and for an entire generation swept over the land, wasting harvest fields, destroying cities, tearing fathers from the protection ot their families, scattering teachers and schools, and arresting the progress of all spiritual and educational improvement. At the close of the war, and in some of the smaller states during its progress, the civil government began to take effectual steps to secure the attendance of children at school, by making it compulsory on parents, on penalty of fine and imprisonment for neglect, to send them during a certain age. This was first attempted in Gotha, in 1643; in Heildesheim, in 1663; and in Prussia, in 1669; and Calemberg, in 1681. About this period, two men appeared, Philip J. Spener, born in the Alsace in 1635, and Augustus Herman Franké, born at Lübeck in 1663; who, the first by the invention of the catechetic method, and the last, a pupil of the former, by the foundation of the orphan-house at Halle in 1696, were destined to introduce a new era in the history of education in Germany.

The history of the orphan-house at Halle, is a beautiful illustration of practical Christian charity, and the ever-extending results of educational labor. While pastor of Glaucha, a suburb of Halle, he was in the habit of distributing bread to the poor, with whose poverty and ignorance he was equally distressed. To relieve at once their physical and spiritual destitution, he invited old and young into his house, and while he distributed alms, he at the same time gave oral and catechetical instruction in the principles of the Christian faith. To benefit the orphan children still more, he took a few into his family in 1694, and to avail himself of the gifts of the charitable, he resorted to the following expedient, according to his biographer, Dr. Guerike:

"He caused a box to be fastened up in the parlor of the parsonage-house, and wrote over it, 'Whoso hath this world's goods, and seeth his brother have need, and shutteth up his bowels of compassion from him, how dwelleth the love of God in him?' (1 John iii. 17,) and underneath, 'Every one according as he purposeth in his heart, so let him give; not grudgingly or of necessity; for God loveth a cheerful giver,' (2 Cor. ix. 17.) This box, which was destined for the reception of the casual gifts of those who visited Franké, was fixed up at the commencement of 1695; and not in vain. The passage (2 Cor. ix. 8,) had fallen in his way, a short time before this circumstance, and now occurred the incident related in his letter to Schadé. 'This,' says he, 'served to show me, how God is able to make us abound in every good work.'

'After the poor's-box had been fixed up in my dwelling about a quarter of a year,' relates Franké, 'a certain person put, at one time, four dollars and sixteen groschen into it. On taking this sum into my hand, I exclaimed with great liberty of faith,—This is a considerable sum, with which something really good must be accomplished; I will commence a school with it for the poor. Without conferring, therefore, with flesh and blood, and acting under the impulse of faith, I made arrangement for the purchase of books to the amount of two dollars, and engaged a poor student to instruct the poor children for a couple of hours daily, promising to give him six groschen weekly for so doing, in the hope that God would meanwhile grant more; since in this manner a couple of dollars would be spent in eight weeks.'

Franké, who was ready to offer up whatever he had to the service of his neighbor, fixed upon the ante-chamber of his study, for the school-room of the poor children, who began regularly to receive instruction at Easter, 1695. In this school-room, he caused a second box to be fixed up, with the inscription, 'For the expenses of the instruction of the children, needful books, &c.,' and underneath, 'He that hath pity upon the poor, lendeth to the Lord; and that which he hath given, will he pay him again,' (Prov. xix. 17.)

At Whitsuntide, Franké was visited by some friends, who were much pleased at his efforts in behalf of the poor, to which they contributed a few dollars. Others also gave small donations, from time to time, to the school-box. Soon after Whitsuntide, when some of the townspeople saw how regularly the children of the poor received instruction, they became desirous of sending their children likewise to the same teacher, and offered to pay him weekly a groschen for each child; so that the teacher now received sixteen groschen weekly for a five-hours' daily instruction. The number of his scholars, that summer, amounted to between fifty and sixty, of which the poor, besides gratuitous instruction, also received alms, twice or thrice a-week, to incite them to attend school the more willingly. Donations in money, and linen, for shirts for the poor children, began now to arrive from other places.

About Whitsuntide of the same year, Franké laid also the first foundation for what was subsequently called the royal school. The widow of a nobleman desired him to send her a domestic tutor for her own, and one of her friend's children. He found no one who was sufficiently far advanced in his studies, and therefore proposed to the parents, to send their children to Halle, and that he would then provide for their education, by able teachers and guardians. The parents agreed to this plan; and a few months afterward, an additional number of youths were sent, and thus originated the seminary above mentioned, which, in 1709, consisted of an inspector, twenty-three teachers, and seventy-two scholars; and in 1711, by means of Franké's exertions, had a building appropriated exclusively to it.

In the summer of the same year, 1695, Franké unexpectedly and unsolicitedly received a very considerable contribution; for a person of rank wrote to him with the offer of five hundred dollars, for the purpose of distribution among the poor, and especially among the indigent students. This money was shortly afterward paid over to him. He then selected twenty poor students, whom he assisted with a weekly donation of four, eight, or twelve groschen; 'and this,' says he, 'was in reality the origin of the poor students' participating to the present hour, in the benefits of the orphan-house.'

In the autumn there was no longer sufficient room in the parsonage for the increasing number of scholars; he therefore hired a school-room of one of his neighbors, and a second in the beginning of the winter. He then divided the scholars into two classes, and provided a separate teacher for the children of the townspeople, and another for the children of the poor. Each teacher gave four hours instruction daily, and received a guilder weekly, besides lodging and firing gratis.

But Franké was soon made to see, that many a hopeful child was deprived, when out of school, of all the benefit he received in it. The idea therefore occurred to him, in the autumn of 1695, to undertake the entire charge and education of a limited number of children; 'and this,' says he, 'was the first incitement I felt, and the first idea of the erection of an orphan-house, even before I possessed the smallest funds for the purpose. On mentioning this plan to some of my friends, a pious individual felt induced to fund the sum of five hundred dollars for that purpose,—twenty-five dollars for the interest on which were to be paid over every Christmas, which has also been regularly received. On reflecting upon this instance of the divine bounty, I wished to seek out some poor orphan child, who might be supported by the yearly interest. On this, four fatherless and motherless children, all of the same family, were brought to me. I ventured, in confidence upon God, to receive the whole four; but as one of them was taken by some other good people, only three were left; but a fourth soon appeared in the place of the one that had been taken. I took therefore these four; placed them with religious people, and gave them weekly half a dollar for the bringing up of each. On this, it happened to me, as is generally the case, that when we venture to give a groschen to the poor in faith, we feel afterward no hesitation in venturing a dollar upon the same principle. For after having once begun in God's name, to receive a few poor orphans without any human prospect of certain assistance, (for the interest of the five hundred dollars was not sufficient to feed and clothe a single one,) I boldly left it to the Lord to make up for whatever might be deficient. Hence the orphan-house was by no means commenced and founded upon any certain sum in hand, or on the assurances of persons of rank to take upon themselves the cost and charges, or upon any thing of a similar nature, as was subsequently reported, and as some were inclined to suppose; but solely and simply in reliance on the living God in heaven.

'The day after I had undertaken the charge of the four orphans above-mentioned, two more were added; the next day, another; two days afterward, a fourth, and one more after the lapse of a week. So that, on the 16th November, 1695, there were already nine, who were placed with pious people.' He fixed upon George Henry Neubauer, a student of divinity, to have the oversight of their education and their bringing up. 'Meanwhile,' continues he, 'the faithful God and Father of the fatherless, who is able to do abundantly above what we can ask or think, came so powerfully to my aid, that foolish reason could never have expected it. For he moved the hearts of those persons of rank, who had given me the five hundred dollars already mentioned, to present me with an additional sum of a thousand dollars in the beginning of the winter. And in the middle of the winter, another person of rank was incited to send me three hundred dollars to enable me to continue my attention to the poor. Another individual gave a hundred dollars, and others gave donations of smaller sums.'

Franké had hitherto distributed the money destined for the poor students weekly; but in 1696, the idea occurred to him, instead of a weekly allowance, to give them dinner gratuitously; 'in the firm confidence in God, that he would from time to time send such supplies, as to enable this arrangement to be continued.' By this he expected to be of greater service to the poor students; he could also, in this manner, become better acquainted with them, and possess a better insight into their life and conduct; and lastly, restrain the applications of the less needy, 'who would gladly have been more delicately fed.' Two open tables were therefore provided—each for twelve poor students; and that one thing might assist the other, he selected the teachers of the charity-school from them. This was the origin of the teachers' seminary, which afterward gradually arose out of it.

The schools of the children of the townspeople who paid a certain sum for their instruction, though inadequate to the expense, were separated from the school for the poor, at the request of the townspeople themselves; and in September, 1697, another school was added for those tradesmen's children who were instructed in the elements of superior science. About this time also, more classes were required in the orphan school, on account of the increased number of the pupils. The boys and girls received separate instruction, and when any of the former manifested abilities, they were again separated from the rest, and instructed in languages and the sciences by particular teachers. In May, 1699, Franké united this class of the orphan children with the class of the tradesmen's children, who likewise received superior instruction. These arrangements for imparting a more learned education, show us the rudiments from whence the Latin school or Gymnasium afterward developed itself in Franké's institutions, which in 1709 was attended by two hundred and fifty-six children, of whom sixty-four were orphans, divided into seven classes; and in 1730, by more than five hundred pupils.

At the time of his death, the Orphan House, or Hallische Waisenhaus, embraced all the institutions which now belong to it.

1. The *Orphan Asylum*, established in 1694, in which over 5,000 orphans had been educated, up to 1838, gratuitously. Such of the boys as manifest peculiar talent, are prepared for the university, and supported there.

2. The *Royal Pædagogium*, founded in 1696, for the education of children of rich and noble families. Up to 1839, 2,850 individuals had been educated in this boarding institution. The profits of this school are paid over to the orphan asylum.

3. The *Latin School*, established in 1697, for pupils from abroad, of less wealthy condition than the former, and for boys of the city of Halle.

4. The *German School*, for boys and girls whose parents do not wish to give them a classic education.

These several schools number from 3,000 to 4,000 pupils,* of every age, and in every study. Besides these schools there are other features in the institution.

5. The *Canstein Bible Press*, established in 1712, to furnish the Bible at a cheap rate. The profits on the sale of an edition are applied to diminish the expense of the next edition.

6. A *Library*, commenced by Franké by setting apart his own books for the use of his schools, and which now number 20,000 volumes.

7. An *Apothecary's Shop*, commenced by Franké as a medicine chest for the poor, and the profit of which, after furnishing the wants of the orphan-house, are applied to the support of the institution.

8. A *Book Establishment*, in which the classics, and school books, are published at a low price, not only for the institution, but for the trade generally.

9. A house for widows.

We have dwelt on the labors of Franké, because he proved his faith in God by his works, and because he was an educator in the largest and best sense of that designation.

According to his biographer, the first teachers' class was founded by Franké in 1697, by providing a table or free board for such poor students as stood in need of assistance, and selecting, a few years later, out of the whole number, twelve who exhibited the right basis of piety, knowledge, skill and desire for teaching, and constituting them his "Seminarium Præceptorum," Teachers' Seminary. These pupil teachers received separate instruction for two years, and obtained a practical knowledge of methods, in the classes of the several schools. For the assistance thus rendered they bound themselves to teach for three years in the institution after the close of their course. In 1704, according to Raumer, this plan was matured, and the supply of teachers for all the lower classes were drawn from this seminary. But besides the teachers trained in this branch of Franké's great establishment, hundreds of others, attracted by the success of his experiment, resorted to Halle, from all parts of Europe, to profit by the organization, spirit, and method of his various schools. Among the most distinguished of his pupils and disciples, may be named, Count Zinzendorf, the founder of the communities of United Brethren, or Moravians, in Herrnhut, in 1722; Steinmetz, who erected a Normal School in Klosterbergen, in 1730; Hecker, the founder of the first Real

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* It is interesting to a visitor to remark in the chief cities of Germany, during certain hours the silence of the streets, with their entire desertion by children, and the contrast of the change produced by the clock striking twelve. The road and footway then suddenly swarm with children, carrying books and slates, and returning from the studies of the morning. The most striking sight of the kind we ever witnessed was at Halle, where, as we approached a large educational establishment, called the "Hallische Waisenhaus," the whole of its juvenile inmates, 3,000 in number, burst forth into the street, and filling up the entire roadway, formed an unbroken stream of a quarter of a mile in length.—*Hickson's Dutch and German Schools.*

School in Berlin, to which a seminary for teachers was attached in 1748; Rambalt, who lectured in the Universities in Jena and Giessen in pedagogic, and reformed the schools in Hesse-Darmstadt; Felbiger, who reorganized the schools of Silesia, and afterward those of Austria;—these, and others scarcely less distinguished, were among the most eminent and successful teachers of the day, and were known as the school of Pietists.

The educational school of Franké was followed by Basedow, (born at Hamburg, in 1723,) Campe, and Salzman, who acquired for themselves a European reputation by the Philanthropinum, founded by the former at Dessau, in 1781.

This institution gave its name to the school of educationists, known as Philanthropinic, and which prevails at this day in some sections of Germany. Its earliest development on the continent was made by Rousseau, in his "Emile," and by John Locke, in England, in his "Thoughts on Education." Its great aim was the formation of a practical character, and this was to be accomplished by following the indications of nature. The body, as well as the mind, was to be hardened and invigorated, and prepared to execute with energy the designs of the mind. The discipline of the family and school was softened by constant appeals to the best principles in the child's nature. Particular attention was paid to instruction in language, music, and the laws and objects of nature. Many of these principles became engrafted on to the teachers of Normal Schools, and through their pupils were introduced into the common schools.

About this time appeared Henry Pestalozzi, who followed in the track of the Philanthropinic School, and by his example and writings, diffused a new spirit among the schools of primary instruction, all over Europe. Although born in Switzerland, at Zurich, in 1746, and although his personal labors were confined to his native country, and their immediate influence was weakened by many defects of character, still his general views of education were so sound and just, that they are now adopted by teachers who never read a word of his life or writings, and by many who never heard of his name. When the Prussian government, in 1809, undertook systematically the work of improving the elementary schools, as a means of creating and diffusing a patriotic spirit among the people, the fame of Pestalozzi was at its height. To him and to his school, to his method and to his disciples, the attention of the best teachers in the kingdom was turned for guidance and aid. Several enthusiastic young teachers were sent to his institution at Yverdun, to study his methods and imbibe his spirit of devotion to the children of the poor. Through them, and others who went directly to Pestalozzi, these principles and methods were transplanted not only into various parts of Prussia, but also into the schools and seminaries of other states in Germany.

The schools of most of the teachers and educators, whose names have been introduced, were in reality Teachers' Seminaries, although not so designated by themselves or others. Their establishments were not simply schools for children, but were conducted to test and exemplify principles and methods of education, and these were perpetuated and disseminated by means of books in which they were embodied, or of pupils and disciples who transplanted them into other places.

As has been already stated, on the authority of Franké's biographer, and of Schwartz, Raumer, and other writers on the history of education in Germany, the first regularly-organized Teachers' Seminary, or Normal School, (not *normal* in the sense in which the word was originally used, as a school of children so conducted as to be a *model* or *pattern* for teachers to imitate, but a *school of young men*, who had already passed through an elementary, or even a superior school, and who were preparing to be teachers, by making additional attainments, and acquiring a knowledge of the human mind, and the principles of education as a science, and of its methods as an art,) was established in Halle, in a part of Hanover, prior to 1704. About the same period, Steinmetz opened a class for teachers in the Abbey of Klosterberge, near Magdeburg, and which was continued by Resewitz, by whom the spirit and method of Franké and the pietists were transplanted into the north of Germany. In 1730, lectures on philology and the best methods of teaching the Latin, Greek and German languages, were common in the principal universities and higher schools. The first regularly-organized seminary for this purpose, was established at Gottingen, in 1738, and by its success led to the institution of a similar course of study and practice in Jena, Helle, Helmstadt, Heidelberg, Berlin, Munich, &c.

In 1735, the first seminary for primary school teachers was established in Prussia, at Stettin, in Pomerania. In 1748, Hecker, a pupil of Franké, and the founder of burgher, or what we should call high schools, established an institution for teachers of elementary schools, in Berlin, in which the king testified an interest, and enjoined, by an ordinance in 1752, that the country schools on the crown lands in New Mark and Pomerania should be supplied by pupil teachers from this institution who had learned the culture of silk and mulberries in Hecker's institution, with a view of carrying forward industrial instruction into that section of his kingdom. In 1757, Baron von Fürstenberg established a seminary for teachers at Munster, in Hanover. In 1767, the Canan von Rochow opened a school on his estate in Rekane, in Brandenburg, where, by lectures and practice, he prepared schoolmasters for country schools on his own and neighboring properties. To these schools teachers were sent from all parts of Germany, to be trained in the principles and practice of primary instruction. In 1770, Bishop Felbinger, organized a Normal (*model*) School in Vienna, with a course of lectures and practice for teachers, extending through four months; and about the same time the deacon Ferdinand Kindermann, or von Schulstein, as he was called by Maria Theresa, converted a school in Kaplitz, in Bohemia, into a Normal Institution. Between 1770 and 1800, as will be seen by the following Table, teachers' seminaries were introduced into nearly every German state, which, in all but three instances, were supported in whole or in part by the government.

As the demand for good teachers exceeded the supply furnished by these seminaries, private institutions have sprung up, some of which have attained a popularity equal to the public institutions. But in no state have such private schools been able to sustain themselves, until the government seminaries and the public school system had created a demand for well-qualified teachers. And in no state in Europe has the experiment of making seminaries for primary school teachers an appendage to a university, or a gymnasium, or any other school of an academic character, proved successful for any considerable period of time, or on an extensive scale.

At the beginning of the present century, there were about thirty teachers' seminaries in operation. The wars growing out of the French Revolution suspended for a time the movements in behalf of popular education, until the success of the new organization of schools in Prussia, commencing in 1809, arrested the attention of governments and individuals all over the continent, and has led, within the last quarter of a century, not only to the establishment of seminaries nearly sufficient to supply the annual demand for teachers, but to the more perfect organization of the whole system of public instruction.

The cardinal principles of the system of Primary Public Instruction as now organized in the German states, are,

First. The recognition on the part of the government of the right, duty and interest of every community, not only to co-operate with parents in the education of children, but to provide, as far as practicable, by efficient inducement and penalties, against the neglect of this first of parental obligations, in a single instance. The school obligation,—the duty of parents to send their children to school, or provide for their instruction at home,—was enforced by law in Saxe-Gotha, in 1643; in Saxony and Wirtemberg, in 1659; in Hildesheim in 1663; in Calemberg, in 1681; in Celle, in 1689; in Prussia, in 1717; and in every state of Germany, before the beginning of the present century. But it is only within the last thirty years, that government enactments have been made truly efficient by enlisting the habits and good will of the people on the side of duty. We must look to the generation of men now coming into active life for the fruits of this principle, universally recognized, and in most cases wisely enforced in every state, large and small, Catholic and Protestant, and having more or less of constitutional guaranties and forms.

Second. The establishment of a sufficient number of permanent schools of different grades, according to the population, in every neighborhood, with a suitable outfit of buildings, furniture, appendages and apparatus.

Third. The specific preparation of teachers, as far as practicable, for the particular grade of schools for which they are destined, with opportunities for professional employment and promotion through life.

Fourth. Provision on the part of the government to make the schools accessible to the poorest, not, except in comparatively a few instances, and those in the most despotic governments, by making them free to the poor, but cheap to all.

Fifth. A system of inspection, variously organized, but constant, general, and responsible—reaching every locality, every school, every teacher, and pervading the whole state from the central government to the remotest district.

The success of the school systems of Germany is universally attributed by her own educators to the above features of her school law—especially those which relate to the teacher. These provisions respecting teachers may be summed up as follows:—

1. The recognition of the true dignity and importance of the office of teacher in a system of public instruction.

2. The establishment of a sufficient number of Teachers' Seminaries, or Normal Schools, to educate, in a special course of instruction and practice, all persons who apply or propose to teach in any public primary school, with aids to self and professional improvement through life.

3. A system of examination and inspection, by which incompetent persons are prevented from obtaining situations as teachers, or are excluded and degraded from the ranks of the profession, by unworthy or criminal conduct.

4. A system of promotion, by which faithful teachers can rise in a scale of lucrative and desirable situations.

5. Permanent employment through the year, and for life, with a social position and a compensation which compare favorably with the wages paid to educated labor in other departments of business.

6. Preparatory schools, in which those who wish eventually to become teachers, may test their natural qualities and adaptation for school teaching before applying for admission to a Normal School.

7. Frequent conferences and associations for mutual improvement, by an interchange of opinion and sharing the benefit of each others' experience.

8. Exemption from military service in time of peace, and recognition, in social and civil life, as public functionaries.

9. A pecuniary allowance when sick, and provision for years of infirmity and old age, and for their families in case of death.

10. Books and periodicals, by which the obscure teacher is made partaker in all the improvements of the most experienced and distinguished members of the profession in his own and other countries.

With this brief and rapid survey of the history and condition of Popular Education in Germany, we will now pass to a more particular description of primary schools in several states, with special reference to the organization and course of instruction of Normal Seminaries, and other means and agencies for the professional training of teachers. Before doing this, we publish a table, prepared from a variety of school documents, exhibiting the number and location of Normal Schools in Germany, with the testimony of some of our best educators as to the result of this Normal School system.

RESULTS OF NORMAL SCHOOL SYSTEM.

Alexander Dallas Bache, LL. D., Superintendent of the United States Coast Survey, in a "*Report on Education in Europe*," to the Trustees of the Girard College of Orphans, Philadelphia, in 1838, remarks as follows:

"When education is to be rapidly advanced, Seminaries for Teachers offer the means of securing this result. An eminent teacher is selected as Director of the Seminary; and by the aid of competent assistants, and while benefiting the community by the instruction given in the schools attached to the Seminary, trains, yearly, from thirty to forty youths in the enlightened practice of his methods; these, in their turn, become teachers of schools, which they are fit at once to conduct, without the failures and mistakes usual with novices; for though beginners in name, they have acquired, in the course of the two or three years spent at the Seminary, an experience equivalent to many years of unguided efforts. This result has been fully realized in the success of the attempts to spread the methods of Pestalozzi and others through Prussia. The plan has been adopted, and is yielding its appropriate fruits in Holland, Switzerland, France, and Saxony; while in Austria, where the method of preparing teachers by their attendance on the primary schools is still adhered to, the schools are stationary, and behind those of Northern and Middle Germany.

These Seminaries produce a strong *esprit de corps* among teachers, which tends powerfully to interest them in their profession, to attach them to it, to elevate it in their eyes, and to stimulate them to improve constantly upon the attainments with which they may have commenced its exercise. By their aid a standard of examination in the theory and practice of instruction is furnished, which may be fairly exacted of candidates who have chosen a different way to obtain access to the profession."

Hon. Horace Mann, in his "*Seventh Annual Report as Secretary of the Board of Education in Massachusetts*," in which he gives an account of an educational tour through the principal countries of Europe in the summer of 1843, says:

"Among the nations of Europe, Prussia has long enjoyed the most distinguished reputation for the excellence of its schools. In reviews, in speeches, in tracts, and even in graver works devoted to the cause of education, its schools have been exhibited as models for the imitation of the rest of Christendom. For many years, scarce a suspicion was breathed that the general plan of education in that kingdom was not sound in theory and most beneficial in practice. Recently, however, grave charges have been preferred against it by high authority. The popular traveler, Laing, has devoted several chapters of his large work on Prussia to the disparagement of its school system. An octavo volume, entitled 'The Age of Great Cities,' has recently appeared in England, in which that system is strongly condemned; and during the pendency of the famous 'Factories' Bill' before the British House of Commons, in 1843, numerous tracts were issued from the English press, not merely calling in question, but strongly denouncing, the whole plan of education in Prussia, as being not only designed to produce, but as actually producing, a spirit of blind acquiescence to arbitrary power, in things spiritual as well as temporal—as being, in fine, a system of education adapted to enslave, and not to enfranchise, the human mind. And even in some parts of the United States—the very nature and essence of whose institutions consist in the idea that the people are wise enough to distinguish between what is right and what is wrong—even here, some have been illiberal enough to condemn, in advance, every thing that savors of the Prussian system, because that system is sustained by arbitrary power.

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But allowing all these charges against the Prussian system to be true, there were still two reasons why I was not deterred from examining it.

In the first place, the evils imputed to it were easily and naturally separable from the good which it was not denied to possess. If the Prussian schoolmaster has better methods of teaching reading, writing, grammar, geography, arithmetic, &c., so that, in half the time, he produces greater and better results, surely we may copy his modes of teaching these elements without adopting his notions of passive obedience to government, or of blind adherence to the articles of a church. By the ordinance of nature, the human faculties are substantially the same all over the world, and hence the best means for their development and growth in one place, must be substantially the best for their development and growth everywhere. The spirit which shall control the action of these faculties when matured, which shall train them to self-reliance or to abject submission, which shall lead them to refer all questions to the standard of reason or to that of authority,—this spirit is wholly distinct and distinguishable from the manner in which the faculties themselves ought to be trained; and we may avail ourselves of all improved methods in the earlier processes, without being contaminated by the abuses which may be made to follow them. The best style of teaching arithmetic or spelling has no necessary or natural connection with the doctrine of hereditary right; and an accomplished lesson in geography or grammar commits the human intellect to no particular dogma in religion.

In the second place, if Prussia can pervert the benign influences of education to the support of arbitrary power, we surely can employ them for the support and perpetuation of republican institutions. A national spirit of liberty can be cultivated more easily than a national spirit of bondage; and if it may be made one of the great prerogatives of education to perform the unnatural and unholy work of making slaves, then surely it must be one of the noblest instrumentalities for rearing a nation of freemen. If a moral power over the understandings and affections of the people may be turned to evil, may it not also be employed for the highest good?

Besides, a generous and impartial mind does not ask whence a thing comes, but what it is. Those who, at the present day, would reject an improvement because of the place of its origin, belong to the same school of bigotry with those who inquired if any good could come out of Nazareth; and what infinite blessings would the world have lost had that party been punished by success! Throughout my whole tour, no one principle has been more frequently exemplified than this,—that wherever I have found the best institutions,—educational, reformatory, charitable, penal, or otherwise,—there I have always found the greatest desire to know how similar institutions were administered among ourselves; and where I have found the worst, there I have found most of the spirit of self-complacency, and even an offensive disinclination to hear of better methods.

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All the subjects I have enumerated were taught in all the schools I visited, whether in city or country, for the rich or for the poor. In the lowest school in the smallest and obscurest village, or for the poorest class in overcrowded cities; in the schools connected with pauper establishments, with houses of correction, or with prisons,—in all these, there was a teacher of *mature age*, of simple, unaffected, and decorous manners, benevolent in his expression, kind and genial in his intercourse with the young, and of such attainments and resources as qualified him not only to lay down the abstract principles of the above range of studies, but, by familiar illustration and apposite example, to commend them to the attention of the children.

I speak of the teachers whom I saw, and with whom I had more or less of personal intercourse; and, after some opportunity for the observation of public assemblies or bodies of men, I do not hesitate to say, that if those teachers were brought together, in one body, I believe they would form as dignified, intelligent, benevolent-looking a company of men as could be collected from the same amount of population in any country. They were alike free from arrogant pretension and from the affectation of humility. It has been often remarked, both in England and in this country, that the nature of a school-teacher's occupation exposes him, in some degree, to overbearing manners, and to dogmatism in the statement of his opinions. Accustomed to the exercise of supreme authority, moving among those who are so much his inferiors in point of attainment, perhaps it is proof of a very well-balanced mind, if he keeps himself free from assumption in opinion and haughtiness of demeanor. Especially are such faults or vices apt to spring up in weak or ill-furnished minds. A teacher who cannot rule by love, must do so by fear. A teacher who cannot supply material for the activity of his pupils' minds by his talent, must put down that activity by force. A teacher who cannot answer all the questions and solve all the doubts of a scholar as they arise, must assume an awful and mysterious air, and must expound in oracles, which themselves need more explanation than the original difficulty. When a teacher knows much, and is master of his whole subject, he can afford to be modest and unpretending. But when the head is the only text-book, and the teacher has not been previously prepared, he must, of course, have a small library. Among all the Prussian and Saxon teachers whom I saw, there were not half a dozen instances to remind one of those unpleasant characteristics,—what Lord Bacon would call the '*idol* of the tribe,' or profession,—which sometimes degrade the name and disparage the sacred calling of a teacher. Generally speaking, there seemed to be a strong love for the employment, always a devotion to duty, and a profound conviction of the importance and sacredness of the office they filled. The only striking instance of disingenuousness or attempt at deception, which I saw, was that of a teacher who looked over the manuscript books of a large class of his scholars, selected the best, and, bringing it to me, said, 'In seeing one you see all.

Whence came this beneficent order of men, scattered over the whole country, molding the character of its people, and carrying them forward in a career of civilization more rapidly than any other people in the world are now advancing? This is a question which can be answered only by giving an account of the Seminaries for Teachers.

From the year 1820 to 1830 or 1835, it was customary, in all accounts of Prussian education, to mention the number of these Seminaries for Teachers. This item of information has now become unimportant, as there are seminaries sufficient to supply the wants of the whole country. The stated term of residence at these seminaries is three years. Lately, and in a few places, a class of preliminary institutions has sprung up,—institutions where pupils are received in order to determine whether they are fit to become candidates to be candidates. As a pupil of the seminary is liable to be set aside for incompetency, even after a three years' course of study; so the pupils of these preliminary institutions, after having gone through with a shorter course, are liable to be set aside for incompetency to become competent.

Let us look for a moment at the guards and securities which, in that country, environ this sacred calling. In the first place, the teacher's profession holds such a high rank in public estimation, that none who have failed in other employments or departments of business, are encouraged to look upon school-keeping as an ultimate resource. Those, too, who, from any cause, despair of success in other departments of business or walks of life, have very slender prospects in looking forward to this. These considerations exclude at once all that inferior order of men who, in some countries, constitute the main body of the teachers. Then come,—though only in some parts of Prussia,—these preliminary schools, where those who wish eventually to become teachers, go, in order to have their natural qualities and adaptation for school-keeping tested; for it must be borne in mind that a man may have the most unexceptionable character, may be capable of mastering all the branches of study, may even be able to make most brilliant recitations from day to day; and yet, from some coldness or repulsiveness of manner, from harshness of voice, from some natural defect in his person or in one of his senses, he may be adjudged an unsuitable model or archetype for children to be conformed to, or to grow by; and hence he may be dismissed at the end of his probationary term of six months. At one of these preparatory schools, which I visited, the list of subjects at the examination,—a part of which I saw,—was divided into two classes, as follows:—1. Readiness in thinking, German language, including orthography and composition, history, description of the earth, knowledge of nature, thorough bass, calligraphy, drawing. 2. Religion, knowledge of the Bible, knowledge of nature, mental arithmetic, singing, violin-playing, and readiness or facility in speaking. The examination in all the branches of the first class was conducted in writing. To test a pupil's readiness in thinking, for instance, several topics for composition are given out, and, after the lapse of a certain number of minutes, whatever has been written must be handed in to the examiners. So questions in arithmetic are given, and the time occupied by the pupils in solving them, is a test of their quickness of thought, or power of commanding their own resources. This facility, or faculty, is considered of great importance in a teacher.* In the second class of subjects the pupils were examined *orally*. Two entire days were occupied in examining a class of thirty pupils, and only twenty-one were admitted to the seminary school;—that is, only about two-thirds were considered to be eligible *to become eligible*, as teachers, after three years' further study. Thus, in this first process, the chaff is winnowed out, and not a few of the lighter grains of the wheat.

It is to be understood that those who enter the seminary directly, and without this preliminary trial, have already studied, under able masters in the Common Schools, at least all the branches I have above described. The first two of the three years, they expend mainly in reviewing and expanding their elementary knowledge. The German language is studied in its relations to rhetoric and logic, and as æsthetic literature; arithmetic is carried out into algebra and mixed mathematics; geography into commerce and manufactures, and into a knowledge of the various botanical and zoological productions of the different quarters of the globe; linear drawing into perspective and machine drawing, and the drawing from models of all kinds, and from objects in nature, &c. The theory and practice, not only of vocal, but of instrumental music, occupy much time. Every pupil must play on the violin; most of them play on the organ, and some on other instruments. I recollect seeing a Normal class engaged in learning the principles of Harmony. The teacher first explained the principles on which they were to proceed. He then wrote a bar of music upon the blackboard, and called upon a pupil to write such notes for another part or accompaniment, as would make *harmony* with the first. So he would write a bar with certain intervals, and then require a pupil to write another, with such intervals as, according to the principles of musical science, would correspond with the first. A thorough course of reading on the subject of education is undertaken, as well as a more general course. Bible history is almost committed to memory. Connected with all the seminaries for teachers are large Model or Experimental Schools. During the last part of the course much of the students' time is spent in these schools. At first they go in and look on in silence, while an accomplished teacher is instructing a class. Then they themselves commence teaching under the eye of such a teacher. At last they teach a class alone, being responsible for its proficiency, and for its condition as to order, &c., at the end of a week or other period. During the whole course, there are lectures, discussions, compositions, &c., on the theory and practice of teaching. The essential qualifications of a candidate for the office, his attainments, and the spirit of devotion and of religious fidelity in which he should enter upon his work; the modes of teaching the different branches; the motive-powers to be applied to the minds of children; dissertations upon the different natural dispositions of children, and, consequently, the different ways of addressing them, of securing their confidence and affection, and of winning them to a love of learning and a sense of duty; and especially the sacredness of the teacher's profession,—the idea that he stands, for the time being, in the place of a parent, and therefore that a parent's responsibilities rest upon him, that the most precious hopes of society are committed to his charge, and that on him depends, to a great extent, the temporal and perhaps the future well-being of hundreds of his fellow-creatures,—these are the conversations, the ideas, the feelings, amid which the candidate for teaching spends his probationary years. This is the daily atmosphere he breathes. These are the sacred, elevating, invigorating influences constantly pouring in upon his soul. Hence, at the expiration of his course, he leaves the seminary to enter upon his profession, glowing with enthusiasm for the noble cause he has espoused, and strong in his resolves to perform its manifold and momentous duties.

Here, then, is the cause of the worth and standing of the teachers, whom I had the pleasure and the honor to see. As a body of men, their character is more enviable than that of either of the three, so-called, 'professions. They have more benevolence and self-sacrifice than the legal or medical, while they have less of sanctimoniousness and austerity, less of indisposition to enter into all the innocent amusements and joyous feelings of childhood, than the clerical. They are not unmindful of what belongs to men while they are serving God; nor of the duties they owe to this world while preparing for another.

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* The above described is a very common method of examining in the gymnasia and higher seminaries of Prussia. Certain sealed subjects for an exercise are given to the students; they are then locked up in a room, each by himself, and at the expiration of a given time, they are enlarged, and it is seen what each one has been able to make out of his faculties.

On reviewing a period of six weeks, the greater part of which I spent in visiting schools in the north and middle of Prussia and in Saxony (excepting, of course, the time occupied in going from place to place), entering the schools to hear the first recitation in the morning, and remaining till the last was completed at night, I call to mind three things about which I cannot be mistaken. In some of my opinions and inferences I may have erred, but of the following facts there can be no doubt:

1. During all this time, I never saw a teacher hearing a lesson of any kind (excepting a reading or spelling lesson), *with a book in his hand*

2. I never saw a teacher *sitting* while hearing a recitation.

3. Though I saw hundreds of schools, and thousands,—I think I may say, within bounds, tens of thousands of pupils,—*I never saw one child undergoing punishment, or arraigned for misconduct. I never saw one child in tears from having been punished, or from fear of being punished.*

During the above period, I witnessed exercises in geography, ancient and modern; in the German language,—from the explanation of the simplest words up to belles-lettres disquisitions, with rules for speaking and writing;—in arithmetic, algebra, geometry, surveying, and trigonometry; in book-keeping; in civil history, ancient and modern; in natural philosophy; in botany and zoology; in mineralogy, where there were hundreds of specimens; in the endless variety of the exercises in thinking, knowledge of nature, of the world, and of society; in Bible history and in Bible knowledge;—and, as I before said, in no one of these cases did I see a teacher with a book in his hand. His book,—his books,—his library, was in his head. Promptly, without pause, without hesitation, from the rich resources of his own mind, he brought forth whatever the occasion demanded. I remember calling one morning at a country school in Saxony, where every thing about the premises, and the appearance, both of teacher and children, indicated very narrow•pecuniary circumstances. As I entered, the teacher was just ready to commence a lesson or lecture on French history. He gave not only the events of a particular period in the history of France, but mentioned, as he proceeded, all the contemporary sovereigns of neighboring nations. The ordinary time for a lesson here, as elsewhere, was an hour. This was somewhat longer, for, toward the close, the teacher entered upon a train of thought from which it was difficult to break off, and rose to a strain of eloquence which it was delightful to hear. The scholars were all absorbed in attention. They had paper, pen, and ink before them, and took brief notes of what was said. When the lesson touched upon contemporary events in other nations,—which, as I suppose, had been the subject of previous lessons,—the pupils were questioned concerning them. A small text-book of history was used by the pupils, which they studied at home.

I ought to say further, that I generally visited schools without guide, or letter of introduction,—presenting myself at the door, and asking the favor of admission. Though I had a general order from the Minister of Public Instruction, commanding all schools, gymnasia, and universities in the kingdom to be opened for my inspection, yet I seldom exhibited it, or spoke of it,—at least not until I was about departing. I preferred to enter as a private individual, an uncommended visitor.

I have said that I saw no teacher *sitting* in his school. Aged or young, all stood. Nor did they stand apart and aloof in sullen dignity. They mingled with their pupils, passing rapidly from one side of the class to the other, animating, encouraging, sympathizing, breathing life into less active natures, assuring the timid, distributing encouragement and endearment to all. The looks of the Prussian teacher often have the expression and vivacity of an actor in a play. He gesticulates like an orator. His body assumes all the attitudes, and his face puts on all the variety of expression, which a public speaker would do if haranguing a large assembly on a topic vital to their interests.

It may seem singular, and perhaps to some almost ludicrous, that a teacher in expounding the first rudiments of handwriting, in teaching the difference between a hair-stroke and a ground-stroke, or how an *l* may be turned into a *b*, or a *u* into a *w*, should be able to work himself up into an oratorical fervor; should attitudinize, and gesticulate, and stride from one end of the class to the other, and appear in every way to be as intensely engaged as an advocate when arguing an important cause to a jury;—but, strange as it may seem, it is nevertheless true; and before five minutes of such a lesson had elapsed, I have seen the children wrought up to an excitement proportionally intense, hanging upon the teacher's lips, catching every word he says, and evincing great elation or depression of spirits, as they had or had not succeeded in following his instructions. So I have seen the same rhetorical vehemence on the part of the teacher, and the same interest and animation on the part of the pupils, during a lesson on the original sounds of the letters,—that is, the difference between the long and the short sound of a vowel, or the different ways of opening the mouth in sounding the consonants *b* and *p*. The zeal of the teacher enkindles the scholars. He charges them with his own electricity to the point of explosion. Such a teacher has no idle, mischievous, whispering children around him, nor any occasion for the rod. He does not make desolation of all the active and playful impulses of childhood, and call it peace; nor, to secure stillness among his scholars, does he find it necessary to ride them with the nightmare of fear. I rarely saw a teacher put questions with his lips alone. He seems so much interested in his subject (though he might have been teaching the same lesson for the hundredth or five hundredth time), that his whole body is in motion;—eyes, arms, limbs, all contributing to the impression he desires to make; and, at the end of an hour, both he and his pupils come from the work all glowing with excitement.

Suppose a lawyer in one of our courts were to plead an important cause before a jury, but instead of standing and extemporizing, and showing by his gestures, and by the energy and ardor of his whole manner, that he felt an interest in his theme, instead of rising with his subject and coruscating with flashes of genius and wit, he should plant himself lazily down in a chair, read from some old book which scarcely a member of the panel could fully understand, and, after droning away for an hour, should leave them, without having distinctly impressed their minds with one fact, or led them to form one logical conclusion;—would it be any wonder if he left half of them joking with each other, or asleep;—would it be any wonder,—provided he were followed on the other side by an advocate of brilliant parts, of elegant diction and attractive manner,—who should pour sunshine into the darkest recesses of the case,—if he lost not only his own reputation, but the cause of his client also?

These incitements and endearments of the teacher, this personal ubiquity, as it were, among all the pupils in the class, prevailed much more, as the pupils were younger. Before the older classes, the teacher's manner became calm and didactic. The habit of attention being once formed, nothing was left for subsequent years or teachers, but the easy task of maintaining it. Was there ever such a comment as this on the practice of hiring cheap teachers because the school is young, or incompetent ones because it is backward!

In Prussia and in Saxony, as well as in Scotland, the power of commanding and retaining the attention of a class is held to be a *sine qua non* in a teacher's qualifications. If he has not talent, skill, vivacity, or resources of anecdote and wit, sufficient to arouse and retain the attention of his pupils during the accustomed period of recitation, he is deemed to have mistaken his calling, and receives a significant hint to change his vocation.

Take a group of little children to a toy-shop, and witness their outbursting eagerness and delight. They need no stimulus of badges or prizes to arrest or sustain their attention; they need no quickening of their faculties by rod or ferule. To the exclusion of food and sleep they will push their inquiries, until shape, color, quality, use, substance, both external and internal, of the objects around them, are exhausted; and each child will want the show-man wholly to himself. But in all the boundless variety and beauty of nature's works; in that profusion and prodigality of charms with which the Creator has adorned and enriched every part of his creation; in the delights of affection; in the ecstatic joys of benevolence; in the absorbing interest which an unsophisticated conscience instinctively takes in all questions of right and wrong;—in all these, is there not as much to challenge and command the attention of a little child, as in the curiosities of a toy-shop? When as much of human art and ingenuity shall have been expended upon teaching as upon toys, there will be less difference between the cases.

The third circumstance I mentioned above was the beautiful relation of harmony and affection which subsisted between teacher and pupils. I cannot say that the extraordinary fact I have mentioned was not the result of chance or accident. Of the probability of that, others must judge. I can only say that, during all the time mentioned, I never saw a blow struck, I never heard a sharp rebuke given, I never saw a child in tears, nor arraigned at the teacher's bar for any alleged misconduct. On the contrary, the relation seemed to be one of duty first, and then affection, on the part of the teacher,—of affection first, and then duty, on the part of the scholar. The teacher's manner was better than parental, for it had a parent's tenderness and vigilance, without the foolish dotings or indulgences to which parental affection is prone. I heard no child ridiculed, sneered at, or scolded, for making a mistake. On the contrary, whenever a mistake was made, or there was a want of promptness in giving a reply, the expression of the teacher was that of grief and disappointment, as though there had been a failure, not merely to answer the question of a master, but to comply with the expectations of a friend. No child was disconcerted, disabled, or bereft of his senses, through fear. Nay, generally, at the ends of the answers, the teacher's practice is to encourage him with the exclamation, 'good,' 'right,' 'wholly right,' &c., or to check him, with his slowly and painfully articulated 'no;' and this is done with a tone of voice that marks every degree of *plus* and *minus* in the scale of approbation and regret. When a difficult question has been put to a young child, which tasks all his energies, the teacher approaches him with a mingled look of concern and encouragement; he stands before him, the light and shade of hope and fear alternately crossing his countenance; he lifts his arms and turns his body,—as a bowler who has given a wrong direction to his bowl will writhe his person to bring the ball back upon its track;—and finally, if the little wrestler with difficulty triumphs, the teacher felicitates him upon his success, perhaps seizes and shakes him by the hand, in token of congratulation; and, when the difficulty has been really formidable, and the effort triumphant, I have seen the teacher catch up the child in his arms and embrace him, as though he were not able to contain his joy. At another time, I have seen a teacher actually clap his hands with delight at a bright reply; and all this has been done so naturally and so unaffectedly as to excite no other feeling in the residue of the children than a desire, by the same means, to win the same caresses. What person worthy of being called by the name, or of sustaining the sacred relation of a parent, would not give any thing, bear any thing, sacrifice any thing, to have his children, during eight or ten years of the period of their childhood, surrounded by circumstances, and breathed upon by sweet and humanizing influences, like these!"

The Rev. Egerton Ryerson, D. D., Chief Superintendent of Schools, in a "*Report on a System of Public Elementary Instruction for Upper Canada*," after quoting the above passages from Mr. Mann's report, remarks:

"In the above summary and important statements on this subject, by the able Secretary of the Massachusetts Board of Education, I fully concur, with two slight exceptions. In one instance I did see a boy in tears (in Berlin) when removed to a lower class on account of negligence in his school preparations. I did see one or two old men sitting *occasionally* in school. With these exceptions, my own similar inquiries and experience of nearly three months in Southern and Western, as well as Northern and Middle Germany, and I might add a longer period of like investigations in Switzerland, Holland, Belgium and France—enable me not only to subscribe to the statements of the Hon. Mr. Mann, but would enable me, were it necessary, to illustrate them by various details of visits to individual schools."

Professor Lemuel Stephens, now of Girard College of Orphans, Philadelphia, in a "*Letter addressed to Hon. F. R. Shunk, Superintendent of Common Schools in Pennsylvania,*" from Berlin, in 1843, remarks:

> "To determine absolutely the influence which teachers' seminaries have had upon the state of popular education in Germany, would be a matter of great difficulty, owing to the gradual growth of these institutions. One thing is certain, that the improvement of the schools has followed, hand in hand, the multiplication and improvement of the seminaries. Perhaps the value of these institutions can be shown in no light so advantageously, as by comparing the class of common school teachers in Germany, at the present moment, with the same class in England and America. In this country one is struck with the zeal and common spirit which a common education has imparted to the whole body. They have been for three or four years under the instruction of men practically and scientifically acquainted with the best principles of teaching; and what is an indispensable part of their preparation, they have had the opportunity of testing the value, and of becoming familiar with the application of these principles in practice. During the latter part of their course they have been accustomed, under the eye of their teachers, to instruct a school of children, by which means the art and the theory have kept pace with each other. Some knowledge of the human mind, and some just conception of the great problem of education which they are engaged in solving, inspires them with self-respect, with earnestness and love of their profession. Once raised above the idea that education consists alone in drilling children in a few useful accomplishments, a sense of the dignity of the work of operating on, and forming other minds, causes them to overlook the humble outward conditions of a village school, and fortifies them against the seductions of false ambition.
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> Leaving out of the question the great immediate benefit of these seminaries in fitting teachers better to fill their office, I believe that the professional spirit, the *esprit du corps*, which they create, is productive of results which are alone sufficient to recommend these institutions. It is this common spirit which secures the progress of the young teacher after he has entered into active service, and saves him from the besetting sin of rusting into a mechanical routine, by keeping up a lively interchange of opinions, and making him acquainted with the successes and improvements of other teachers. The means for this intercourse, are conferences and periodicals of education. In every German city, in which I have made the inquiry, I have learned that the teachers from the different schools are accustomed to come together, at stated times for the purpose of mutual improvement: even in the villages of Hesse, and the mountainous part of Saxony, I found that the teachers, from villages miles apart, held their monthly conferences for debate and lecture.
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> In Germany there are no less than thirty periodicals devoted exclusively to education. In these all questions of interest to teachers are discussed; the best method of instructing explained, all new school books noticed and criticised: the arrangements and organizations of distinguished schools described, and accounts given from time to time of the progress of education in other states. The General School Gazette, which has particularly attracted my attention, has a list of more than one hundred regular contributors. The journals are open to all teachers to make known their experience, or to ask for information. The able director of the seminary in this city, who is at the same time the conductor of one of these periodicals, informs me that one or more of them finds its way to every common school teacher. They are furnished so low that he can generally afford to take them, or if not, they are taken by the district for his benefit. By these means an active spirit of inquiry is kept up; the improvements of individuals become the property of all; the obscure village teacher feels that he is a member of a large and respectable class, engaged in the great work of human improvement; and love and zeal for his profession are enkindled. There is union, sympathy, generous emulation and mutual improvement. Among the members of a profession, there is a common principle of life. It is a type of organic life, which contains within itself the principle of development and growth.
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> A valuable ordinance passed in Prussia, in 1826, and renewed in 1846, requires a director of a seminary to travel about once a year, and visit a certain part of the schools within his circuit. He makes himself acquainted with the

state of the school, listens to the instruction given, takes part himself in the same, and gives to the teacher such hints for improvement as his observation may suggest. The results of his yearly visits he presents in the form of a report to the school authorities of the province. This occasional visitation is very useful in clearing up the dark corners of the land, correcting abuses, and giving an impulse, from time to time, to teachers, who might otherwise sink into apathy and neglect. To render the efficacy of the seminaries more complete, it is provided that at the end of three years after leaving the seminary, the young teachers shall return to pass a second examination. And further, by an ordinance in 1826, it is provided, 'To the end, that the beneficial influence of the seminary may extend itself to those teachers already established, who either require further instruction, or who in their own cultivation and skill in office do not advance, perhaps even recede; it is required that such teachers be recalled into the seminary for a shorter or longer time, as may be needful for them, in order, either to pass through a whole methodical course, or to practice themselves in particular departments of instruction.' By this organization it is very easy to see that the whole system of popular instruction is brought under the influence of the most able teachers; their skill is made to tell upon the character of the class; and the assurance is given that the work of education is advancing surely and consequently toward perfection.

It is only by the distinct division of the objects of human industry and knowledge, into separate arts and sciences, that their advancement can be insured. The necessity for the division of labor in the mechanic arts is well enough understood. A necessity for this division, in intellectual pursuits, exists in a by no means less degree. So long as the science of education depends for its development upon the casual contributions of men of all professions, without being made the business of any, it must grope its way hither and thither by the light of occasional flashes, instead of being guided on by a steady flame.

The views of certain men on education are known among us, but so far is pedagogics from being cultivated as a science, we feel ourselves as yet hardly authorized to use the word. I am far from denying that we have many very good teachers; but they stand separate and alone. Their influence rarely extends beyond the sphere of their own schools. Their experience has furnished them with excellent practical rules for their own procedure, but these rules have perhaps never been expressed in words, much less their truth demonstrated by a reduction of the same to scientific principles. They are content to be known as possessing the mysterious talent of a skillful teacher, and their wisdom dies with them. It is owing to the isolated position in which teachers by profession find themselves, that the didactic skill they may have acquired, even when it rises above the character of a blind faculty, and is founded on the enlightened conclusions of science, still remains almost without influence on the wrong ideas in education which may be in vogue around them. To quote a remark of Dr. Harnisch: 'we have had, now and then, capable teachers without possessing seminaries: we still find such *singly* in states which yet have no seminaries, but it can not be denied that seminaries are most effectual levers for elevating the condition of common schools, and such they have sufficiently proved themselves to be in latter years.'"

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"How far may we avail ourselves of the German plan of popular education? It will be borne in mind, that the Prussian system is so far voluntary that it is left entirely to the parent where, and in what manner, his child shall be educated, only requiring that the years, from six till fourteen, shall be devoted to instruction, and that a certain amount of knowledge shall be obtained. The Swiss republics have placed their public schools on the same basis that the German states have done, their laws are essentially the same, and teachers have therefore, there as well as in Germany, the character of public servants. The great feature of the Prussian system, which it is both suitable and highly desirable for us to imitate, is that which I have already described, namely: the provision therein made for the education of common school teachers. This appears to me the only radical reform, and the only means of putting public education in a steady and consequent train of improvement.

To apply to ourselves the advantages which I have already stated as flowing from this measure—It will raise the employment of teaching among us to a regular profession, and introduce generally consistent and rational methods of instructing. It will create among teachers, devotion to their office, and a desire for co-operation. This desire will manifest itself in the organization of unions for conference, and in the establishment and support of many periodicals. The higher character of teachers, and the improved state of the schools, will bring them respect, and a better remuneration for their services. The higher value set upon education, the immense contrast between the efficacy of a constant, and that of a half-yearly school, and I must add, the *impossibility of getting good teachers for the latter*, will gradually do away with this great evil under which our school system suffers. The permanent settlement of teachers, rendering much less the annual accession to the profession necessary to keep the schools supplied, will, as I have shown, obviate all difficulty on the score of numbers. The science of the human mind and its cultivation, this vitally important branch of a nation's literature, will be developed among us, and its blessings will be richly manifested in the better cultivation of all the sciences and arts of life.

Such is a scanty outline of the benefits which the experience of other countries, and reason, show us will follow the proper education of our teachers. I do not mean to say that Germany has already realized all these benefits. It is important to observe that the reform in education in this country, goes out from the government, not from the people themselves, who rather passively submit to its operation, than actively co-operate in giving it efficacy. This, with other grounds before stated, necessarily make popular education in Germany productive of less results than in our own country. * *

In the establishment of teachers' seminaries, their utility and success will depend entirely upon their appropriate and perfect organization. False economy has often attempted to provide for the education of primary teachers, by making the seminary an appendage to a high school, or an academy. Thirty years ago this arrangement was not uncommon in Germany; and later the experiment has been tried in the State of New York. * * If it were needed, to strengthen the evidence of the inefficiency of this system, I might easily quote the testimony of the most able teachers of Germany to this effect. Perhaps no department of education requires a more peculiar treatment, and more calls for the undivided zeal and energy of those who have the conduct of it, than the preparation of teachers.

Every thing depends on making the seminaries for teachers, separate and independent establishments, with a careful provision for a thorough, theoretical and practical preparation for all the duties of the common school. In the experiment of introducing teachers' seminaries into our country, there is a danger that we shall be too sparing in the number of teachers employed in conducting them. Seminaries conducted by one or two teachers can not be otherwise than imperfect; and while but little good would come from them, there is great danger that their failure would serve to bring the cause into disrepute."

III. COURSE OF INSTRUCTION
IN THE PRIMARY SCHOOLS
OF GERMANY.

Rev. Calvin E. Stowe, D. D., in 1839, while Professor of Biblical Literature in Lane Seminary, Cincinnati, Ohio, visited Europe, and on his return submitted to the General Assembly of Ohio, in December, 1839, a "Report on Elementary Public Instruction in Europe," in which he thus describes the course of instruction pursued in the Primary Schools of Germany, particularly of Prussia and Wirtemburg.

The whole course comprises eight years, and includes children from the ages of six to fourteen; and it is divided into four parts, of two years each. It is a first principle, that the children be well accommodated as to house and furniture. The school-room must be well constructed, the seats convenient, and the scholars made comfortable, and kept interested. The younger pupils are kept at school but four hours in the day—two in the morning and two in the evening, with a recess at the close of each hour. The older, six hours, broken by recesses as often as is necessary. Most of the school-houses have a bathing-place, a garden, and a mechanic's shop attached to them, to promote the cleanliness and health of the children, and to aid in mechanical and agricultural instruction. It will be seen by the schedule which follows, that a vast amount of instruction is given during these eight years; and lest it should seem that so many branches must confuse the young mind, and that they must necessarily be but partially taught, I will say, in the outset, that the industry, skill, and energy of teachers regularly trained to their business, and depending entirely upon it; the modes of teaching; the habit of always finishing whatever is begun; the perfect method which is preserved; the entire punctuality and regularity of attendance on the part of the scholars; and other things of this kind, facilitate a rapidity and exactness of acquisition and discipline, which may well seem incredible to those who have never witnessed it.

The greatest care is taken that acquisition do not go beyond discipline; and that the taxation of mind be kept entirely and clearly within the constitutional capacity of mental and physical endurance. The studies must never weary, but always interest; the appetite for knowledge must never be cloyed, but be kept always sharp and eager. These purposes are gradually aided by the frequent interchange of topics, and by lively conversational exercises. Before the child is even permitted to learn his letters, he is under conversational instruction, frequently for six months or a year; and then a single week is sufficient to introduce him into intelligible and accurate plain reading.

Every week is systematically divided, and every hour appropriated. The scheme for the week is written on a large sheet of paper, and fixed in a prominent part of the school-room, so that every scholar knows what his business will be for every hour in the week; and the plan thus marked out is rigidly followed.

Through all the parts of the course there are frequent reviews and repetitions, that the impressions left on the mind may be distinct, lively, and permanent. The exercises of the day are always commenced and closed with a short prayer; and the Bible and hymn-book are the first volumes put into the pupils' hands; and these books they always retain and keep in constant use during the whole progress of their education.

The general outline of the eight years' course is nearly as follows:

I. *First part, of two years, including children from six to eight years old; four principal branches, namely:*

1. Logical exercises, or oral teaching in the exercise of the powers of observation and expression, including religious instruction and the singing of hymns.
2. Elements of reading.
3. Elements of writing.
4. Elements of number, or arithmetic.

II. *Second part, of two years, including children from eight to ten years old—seven principal branches, namely:*

1. Exercises in reading.
2. Exercises in writing.
3. Religious and moral instruction, in select Bible narratives.
4. Language, or grammar.
5. Numbers, or arithmetic.
6. Doctrine of space and form, or geometry.
7. Singing by note, or elements of music.

III. *Third part, of two years, including children from ten to twelve years old—eight principal branches, namely:*

1. Exercises in reading and elocution.
2. Exercises in ornamental writing, preparatory to drawing.
3. Religious instruction in the connected Bible history.
4. Language, or grammar, with parsing.
5. Real instruction, or knowledge of Nature and the external world, including the first elements of the sciences and the arts of life—of geography and history.
6. Arithmetic continued through fractions and the rules of proportion.
7. Geometry—doctrine of magnitudes and measures.
8. Singing and science of vocal and instrumental music.

IV. *Fourth part, of two years, including children from ten to twelve years old—six principal branches, namely:*

1. Religious instruction in the religious observation of Nature; the life and discourses of Jesus Christ; the history of the Christian religion, in connection with the contemporary civil history; and the doctrines of Christianity.
2. Knowledge of the world, and of mankind, including civil society, elements of law, agriculture, mechanic arts, manufactures, &c.
3. Language, and exercises in composition.
4. Application of arithmetic and the mathematics to the business of life, including surveying and civil engineering.
5. Elements of drawing.
6. Exercises in singing, and the science of music.

We subjoin a few specimens of the mode of teaching under several of the above divisions.

I. *First part—children from six to eight years of age.*

1. Conversations between the teacher and pupils, intended to exercise the powers of observation and expression.

The teacher brings the children around him, and engages them in a familiar conversation with himself. He generally addresses them all together, and they all reply simultaneously; but, whenever necessary, he addresses an individual, and requires the individual to answer alone. He first directs their attention to the different objects in the school-room, their position, form, color, size, materials of which they are made, &c., and requires precise and accurate descriptions. He then requires them to notice the various objects that meet their eye in the way to their respective homes; and a description of these objects, and the circumstances under which they saw them, will form the subject of the next morning's lesson. Then the house in which they live, the shop in which their father works, the garden in which they walk, &c., will be the subject of the successive lessons; and in this way for six months or a year, the children are taught to study *things*, to use their own powers of observation, and speak with readiness and accuracy, before books are put into their hands at all. A few specimens will make the nature and utility of this mode of teaching perfectly obvious.

In a school in Berlin, a boy has assigned him for a lesson, a description of the remarkable objects in certain directions from the school-house, which is situated in Little Cathedral street. He proceeds as follows: "When I come out of the school-house into Little Cathedral street, and turn to the right, I soon pass on my left hand the Maria Place, the Gymnasium, and the Anklam Gate. When I come out of Little Cathedral street, I see on my left hand the White Parade Place, and within that, at a little distance, the beautiful statue of Frederick the Great, King of Prussia. It is made of white marble, and stands on a pedestal of variegated marble, and is fenced in with an iron railing. From here, I have on my right a small place, which is a continuation of the Parade Place; and at the end of this, near the wall, I see St. Peter's Church, or the Wall-street Church, as it is sometimes called. This church has a green yard before it, planted with trees, which is called the Wall Church Yard. St. Peter's Church is the oldest church in the city; it has a little round tower, which looks green, because it is mostly covered with copper, which is made green by exposure to the weather. When I go out of the school-house to the lower part of Little Cathedral street, by the Coal-market, through Shoe street and Carriage street, I come to the Castle. The Castle is a large building, with two small towers, and is built around a square yard, which is called the Castle-yard. In the Castle there are two churches, and the King and his Ministers of State, and the Judges of the Supreme Court, and the Consistory of the Church, hold their meetings there. From the Coal-market, I go through Shoe street to the Hay-market, and adjoining this is the New-market, which was formed after St. Nicholas's Church was burnt, which formerly stood in that place. Between the Hay-market and the New-market is the City Hall, where the officers and magistrates of the city hold their meetings."

If a garden is given to a class for a lesson, they are asked the size of the garden; its shape, which they may draw on a slate with a pencil; whether there are trees in it; what the different parts of a tree are; what parts grow in the spring, and what parts decay in autumn, and what parts remain the same throughout the winter; whether any of the trees are fruit trees; what fruits they bear; when they ripen; how they look and taste; whether the fruit be wholesome or otherwise; whether it is prudent to eat much of it; what plants and roots there are in the garden, and what use is made of them; what flowers there are, and how they look, &c. The teacher may then read them the description of the garden of Eden in the second chapter of Genesis—sing a hymn with them, the imagery of which is taken from the fruits and blossoms of a garden, and explain to them how kind and bountiful God is, who gives us such wholesome plants and fruits, and such beautiful flowers for our nourishment and gratification.

The external heavens also make an interesting lesson. The sky—its appearance and color at different times; the clouds—their color, their varying form and movements; the sun—its rising and setting, its concealment by clouds, its warming the earth and giving it life and fertility, its great heat in summer, and the danger of being exposed to it unprotected; the moon—its appearance by night, full, gibbous, horned; its occasional absence from the heavens; the stars—their shining, difference among them, their number, distance from us, &c. In this connection the teacher may read to them the eighteenth and nineteenth Psalms, and other passages of Scripture of that kind, sing with them a hymn celebrating the glory of God in the creation, and enforce the moral bearing of such contemplations by appropriate remarks. A very common lesson is, the family and family duties, love to parents, love to brothers and sisters, concluding with appropriate passages from Scripture, and singing a family hymn.

2. Elements of reading.

After a suitable time spent in the exercises above described, the children proceed to learn the elements of reading. The first step is to exercise the organs of sound till they have perfect command of their vocal powers; and this, after the previous discipline in conversation and singing, is a task soon accomplished. They are then taught to utter distinctly all the vowel sounds. The characters or letters representing these sounds are then shown and described to them, till the form and power of each are distinctly impressed upon their memories. The same process is then gone through in respect to dipthongs and consonants. Last of all, after having acquired a definite and distinct view of the different sounds, and of the forms of the letters which respectively represent these sounds, they are taught the names of these letters, with the distinct understanding that the *name* of a letter and the *power* of a letter are two very different things.

They are now prepared to commence reading. The letters are printed in large form, on square cards; the class stands up before a sort of rack; the teacher holds the cards in his hand, places one upon the rack, and a conversation of this kind passes between him and his pupils: What letter is that? H. He places another on the rack. What letter is that? A. I now put these two letters together, thus, (moving the cards close together,) H A. What sound do these two letters signify? *Ha.* There is another letter. What letter is that? (putting it on the rack.) R. I now put this third letter to the other two, thus, HAR. What sound do the three letters make? *Har*. There is another letter. What is it? D. I join this letter to the other three, thus, HARD. What do they all make? *Hard*. Then he proceeds in the same way with the letters F-I-S-T; joins these four letters to the preceding four, HARD-FIST, and the pupils pronounce, *Hard-fist*. Then with the letters E and D, and joins these two to the preceeding eight, and the pupils pronounce, *Hard-fisted*. In this way they are taught to read words of any length, (for you may easily add to the above, N-E-S-S, and make *Hard-fistedness*)—the longest as easily as the shortest; and in fact they learn their letters; they learn to read words of one syllable and of several syllables, and to read in plain reading, by the same process, at the same moment. After having completed a sentence, or several sentences, with the cards and rack, they then proceed to read the same words and sentences in their spelling-books.

3. Elements of writing.

The pupils are first taught the right position of the arms and body in writing, the proper method of holding the pen, &c.; and are exercised on these points till their habits are formed correctly. The different marks used in writing are then exhibited to them, from the simple point or straight line, to the most complex figure. The variations of form and position which they are capable of assuming, and the different parts of which the complex figures are composed, are carefully described, and the student is taught to imitate them, beginning with the most simple; then the separate parts of the complex, then the joining of the several parts to a whole, with his pencil and slate. After having acquired facility in this exercise, he is prepared to write with his ink and paper. The copy is written upon the blackboard; the paper is laid before each member of the class, and each has his pen ready in his hand, awaiting the word of his teacher. If the copy be the simple point, or line | , the teacher repeats the syllable *one*, *one*, slowly at first, and with gradually increasing speed, and at each repetition of the sound the pupils write. In this way they learn to make the mark both correctly and rapidly. If the figure to be copied consists of two strokes, (thus, ɿ,) the teacher pronounces *one*, *two*—*one*, *two*, slowly at first, and then rapidly, as before; and the pupils make the first mark, and then the second, at the sound of each syllable, as before. If the figure consist of three strokes, (thus, ɩ,) the teacher pronounces *one*, *two*, *three*, and the pupils write as before. So when they come to make letters, the letter *a* has five strokes, thus, *a*. When that is the copy, the teacher says, deliberately, *one*, *two*, *three*, *four*, *five*, and at the sound of each syllable the different strokes composing the letter are made; the speed of utterance is gradually accelerated, till finally the *a* is made very quickly, and at the same time neatly. By this method of teaching, a plain, neat, and quick hand, is easily acquired.

4. Elements of number, or arithmetic.

In this branch of instruction I saw no improvements in the mode of teaching not already substantially introduced into the best schools of our own country. I need not, therefore, enter into any details respecting them, excepting so far as to say that the student is taught to demonstrate, and perfectly to understand, the reason and nature of every rule before he uses it.

II. *Second part—children from eight to ten years of age.*

1. Exercises in reading.

The object of these exercises, in this part of the course, is to acquire the habit of reading with accuracy and readiness, with due regard to punctuation, and with reference to orthography. Sometimes the whole class read together, and sometimes an individual by himself, in order to accustom them to both modes of reading, and to secure the advantages of both. The sentence is first gone through with in the class, by distinctly spelling each word as it occurs; then by pronouncing each word distinctly without spelling it; a third time by pronouncing the words and mentioning the punctuation points as they occur. A fourth time, the sentence is read with the proper pauses indicated by the punctuation points, without mentioning them. Finally, the same sentence is read with particular attention to the intonations of the voice. Thus one thing is taken at a time, and pupils must become thorough in each as it occurs, before they proceed to the next. One great benefit of the class reading together is, that each individual has the same amount of exercise as if he were the only one under instruction, his attention can never falter, and no part of the lesson escapes him. A skillful teacher, once accustomed to this mode of reading, can as easily detect any fault, mispronunciation, or negligence, in any individual, as if that individual were reading alone.

The process is sometimes shortened, and the sentence read only three times, namely: "according to the words, according to the punctuation, according to the life."

2. Exercises in writing.

The pupils proceed to write copies in joining-hand, both large and small, the principles of teaching being essentially as described in the first part of the course. The great object here is, to obtain a neat, swift, business hand. Sometimes, without a copy, they write from the dictation of the teacher; and in most cases instruction in orthography and punctuation is combined with that in penmanship. They are also taught to make and mend their own pens, and in doing this to be economical of their quills.

3. Religious and moral instruction in select Bible narratives.

In this branch of teaching the methods are various, and the teacher adopts the method best adapted, in his judgement, to the particular circumstances of his own school, or to the special objects which he may have in view with a particular class. Sometimes he calls the class around him, and relates to them in his own language, some of the simple narratives of the Bible, or reads it to them in the words of the Bible itself, or directs one of the children to read it aloud; and then follows a friendly, familiar conversation between him and the class respecting the narrative; their little doubts are proposed and resolved, their questions put and answered, and the teacher unfolds the moral and religious instruction to be derived from the lesson, and illustrates it by appropriate quotations from the didactic and preceptive parts of the Scripture. Sometimes he explains to the class a particular virtue or vice, a truth or a duty; and after having clearly shown what it is, he takes some Bible narrative which strongly illustrates the point in discussion, reads it to them, and directs their attention to it, with special reference to the preceding narrative.

A specimen or two of these different methods will best show what they are.

(*a*) Read the narrative of the birth of Christ, as given by Luke, ii. 1–20. Observe, Christ was born for the salvation of men, so also for the salvation of children. Christ is the children's friend. Heaven rejoices in the good of men. Jesus, though so great and glorious, makes his appearance in a most humble condition. He is the teacher of the poor, as well as of the rich.

With these remarks compare other texts of the Bible.

Jno iii. 16. "For God so loved the world that he gave his only begotten Son, that whosoever believeth in him should not perish, but have everlasting life."

1. Jno. iv. 9 "In this was manifested the love of God toward us; because that God sent his only begotten Son into the world, that we might live through him."

Mark x. 14. 15. "But when Jesus saw it he was much displeased, and said unto them, Suffer little children to come unto me, for of such is the kingdom of God. Verily I say unto you, whosoever shall not receive the kingdom of God as a little child, he shall not enter therein."

And the lesson is concluded with singing a Christmas hymn.

Jesus feeds five thousand men: Jno. vi. 1–14.

God can bless a little so that it will do great good.

Economy suffers nothing to be lost—other texts: Ps. cxlv. 15, 16.

"The eyes of all wait upon thee; and thou givest them their meat in due season."

"Thou openest thy hand, and satisfiest the desire of every living thing."

Matt. vi. 31–33. "Therefore take no thought, saying, what shall we eat? or, What shall we drink? or, Wherewithal shall we be clothed? (for after all these things do the Gentiles seek:) for your heavenly Father knoweth that ye have need of all these things. But seek ye first the kingdom of God, and his righteousness; and all these things shall be added unto you."

Story of Cain and Abel. Gen. iv. 1–16.

Remarks.—Two men may do the same thing externally, and yet the merit of their acts be very different. God looks at the heart. Be careful not to cherish envy or ill will in the heart. You know not to what crimes they may lead you. Remorse and misery of the fratricide—other texts. Matt. xv. 19. Heb. xi. 4. 1 Jno. iii. 12. Job. xxxiv. 32.

"For out of the heart proceed evil thoughts, murders, adulteries, fornications, thefts, false witness, blasphemies."

"By faith Abel offered unto God a more excellent sacrifice than Cain, by which he obtained witness that he was righteous, God testifying of his gifts: and by it he, being dead, yet speaketh."

"Not as Cain, who was of that wicked one, and slew his brother. And wherefore slew he him? Because his own works were evil, and his brother's righteous."

Story of Jesus in the temple. Luke ii. 41-52.

Jesus in his childhood was very fond of learning, (he heard and asked questions.) God's word was his delight, he understood what he heard and read, (men were astonished at his understanding and answers.) He carefully obeyed his parents, (he went with them and was subject to them.) And as he grew up, his good conduct endeared him to God and man. Other texts. Eph. vi. 1-4. Prov. iii. 1-4.

"Children! obey your parents in the Lord; for this is right. Honor thy father and mother, (which is the first commandment with promise,) that it may be well with thee, and thou mayest live long on the earth. And ye fathers! provoke not your children to wrath, but bring them up in the nurture and admonition of the Lord."

"My son, forget not my law; but let thine heart keep my commandments: For length of days, and long life, and peace, shall they add to thee. Let not mercy and truth forsake thee: bind them about thy neck; write them upon the table of thine heart: So shalt thou find favor and good understanding in the sight of God and man."

On the other mode of teaching, the teacher, for example, states the general truth, that God protects and rewards the good, and punishes the bad. In illustration of this he reads to them the narrative of Daniel in the lions' den, and the death which overtook his wicked accusers. Dan. vi. In illustration of the same truth, the escape of Peter, and the miserable death of his persecutor, Herod, may be read. Acts xii.

The teacher may impress upon the mind of his class, that diligence, scrupulous fidelity, and conscientious self-control, are the surest guarantees of success in life; and, in illustration of the statement, read the narrative of Joseph's conduct in his master's house in Egypt, and in the prison, and the results of it. Gen. xxxix. So, also, various incidents in the life of Jesus may be used to great advantage in illustrating different virtues.

It is recommended that the teacher employ, in his instructions, the translation of the Scriptures in general use among the people; but that he occasionally take the original Scriptures and read to the children, in his own translation, and sometimes use simple translations from different authors, that children may early learn to notice the diversities in different faithful translations, and see what they really amount to.

It is scarcely necessary to observe, that a teacher who understands his business, and is faithful to his trust, will scrupulously abstain from sectarian peculiarities, or from casting odium on the tenets of any of the Christian denominations. A man who has not magnanimity or enlargement of mind enough for this, is not fit to be employed as a teacher, even in the humblest branches of knowledge.

4. Language, or grammar.

The knowledge of the native tongue, the ability to use it with correctness, facility, and power, is justly regarded as one of the most important branches of common school instruction. It is the principal object of the *logical exercises*, or, as they may be justly termed, *the exercises in thinking and speaking*, already described as the first subject of study in the first part of the course, before the child has begun to use his book at all.

In this second part of the course, grammar is taught directly and scientifically, yet by no means in a dry and technical manner. On the contrary, technical terms are carefully avoided, till the child has become familiar with the nature and use of the things designated by them, and he is able to use them as the names of ideas which have a definite existence in his mind, and not as awful sounds, dimly shadowing forth some mysteries of science into which he has no power to penetrate.

The first object is to illustrate the different parts of speech, such as the noun, the verb, the adjective, the adverb; and this is done by engaging the pupil in conversation, and leading him to form sentences in which the particular parts of speech to be learned shall be the most important word, and directing his attention to the nature and use of the word in the place where he uses it. For example, let us suppose the nature and use of the adverb are to be taught. The teacher writes upon the blackboard the words "here, there, near," &c. He then says, "Children, we are all together in this room; by which of the words on the blackboard can you express this?" *Children.* "We are all *here*." *Teacher.* "Now look out of the window and see the church; what can you say of the church with the second word on the blackboard?" *Children.* "The church is *there*." *Teacher.* "The distance between us and the church is not great; how will you express this by a word on the blackboard?" *Children.* "The church is *near*," The fact that these different words express the same sort of relations is then explained, and, accordingly, that they belong to the same class, or are the same part of speech. The variations of these words are next explained. "Children, you say the church is near, but there is a shop between us and the church; what will you say of the shop?" *Children.* "The shop is *nearer*." *Teacher.* "But there is a fence between us and the shop. Now when you think of the distance between us, the shop and the fence, what will you say of the fence?" *Children.* "The fence is *nearest*." So of other adverbs. "The lark sings *well*. Compare the singing of the lark with that of the canary bird. Compare the singing of the nightingale with that of the canary bird." After all the different sorts of adverbs and their variations have in this way been illustrated, and the pupils understand that all words of this kind are called *adverbs*, the definition of the adverb is given as it stands in the grammar, and the book is put into their hands to study the chapter on this topic. In this way the pupil understands what he is doing at every step of his progress, and his memory is never burdened with mere names, to which he can attach no definite meaning.

The mode of teaching the subsequent branches is founded on the same general principles, and it may not be necessary to give particular examples.

5. Numbers, or arithmetic.
6. Doctrine of space and form, or geometry.
7. Singing by note, or elements of music.

The method of teaching music has already been successfully introduced into our own State, and whoever visits the schools of Messrs. Mason or Solomon, in Cincinnati, will have a much better idea of what it is than any description can give; nor will any one who visits these schools entertain a doubt that all children from six to ten years of age, who are capable of learning to read, are capable of learning to sing, and that this branch of instruction can be introduced into all our common schools with the greatest advantage, not only to the comfort and discipline of the pupils, but also to their progress in their other studies.

The students are taught from the blackboard. The different sounds are represented by lines of different lengths, by letters, by figures, and by musical notes; and the pupils are thoroughly drilled on each successive principle before proceeding to the next.

III. *Third part, of two years—children from ten to twelve.*

1. Exercises in reading and elocution.

The objects of these exercises, in this part of the course, is to accustom the pupils to read in a natural and impressive manner, so as to bring the full force of the sentiment on those to whom they read. They are examined in modulation, emphasis, and the various intonations, and they often read sentences from the blackboard in which the various modulations are expressed by musical notes or curved lines.

The evils of drawling and monotone are prevented in the outset by the method of teaching, particularly the practice of the whole class reading together and keeping time. Short and pithy sentences, particularly the Book of Proverbs, are recommended as admirably adapted to exercises of this kind.

2. Ornamental writing, introductory to drawing.

The various kinds of ornamental letters are here practiced upon, giving accuracy to the eye and steadiness to the hand, preparatory to skill in drawing, which comes into the next part of the course. The pupils also practice writing sentences and letters, with neatness, rapidity, and correctness.

3. Religious instruction in the connected Bible history.

The design here is to give to the student a full and connected view of the whole Bible history. For this purpose large tables are made out and hung before the students. These tables are generally arranged in four columns, the first containing the names of the distinguished men during a particular period of Bible history;

the second, the dates; the third, a chronological register of events; and the fourth, the particular passages of the Bible where the history of these persons and events may be found. With these tables before the pupils, the teacher himself, in his own words, gives a brief conversational outline of the principal characters and events within a certain period, and then gives directions that the scriptural passages referred to be carefully read. After this is done, the usual recitation and examination takes place. Some of the more striking narratives, such as the finding of Moses on the banks of the Nile; Abraham offering his son; the journey of the wise men to do homage to Christ; the crucifixion; the conversion of Paul, &c., are committed to memory in the words of the Bible, and the recitation accompanied with the singing of a hymn alluding to these events. The moral instruction to be derived from each historical event is carefully impressed by the teacher. The teacher also gives them a brief view of the history between the termination of the Old and the commencement of the New Testament, that nothing may be wanting to a complete and systematic view of the whole ground. Thus the whole of the historical part of the Bible is studied thoroughly, and systematically, and practically, without the least sectarian bias, and without a moment being spent on a single idea that will not be of the highest use to the scholar during all his future life.

4. Language and grammar.

There is here a continuation of the exercises in the preceding parts of the course, in a more scientific form, together with parsing of connected sentences, and writing from the dictation of the teacher, with reference to grammar, orthography, and punctuation. The same principal alluded to before, of avoiding technical terms till the things represented by those terms are clearly perceived, is here carefully adhered to. A single specimen of the manner in which the modes and tenses of the verb are taught may be sufficient to illustrate my meaning. The teacher writes on the blackboard a simple sentence, as, "The scholars learn well;" and asks the class what sort of a sentence it is. They reply that it is a direct statement of a fact. (Teach.) Put it in the form of a command. (Class.) Scholars, learn well! (Teach.) Put it in a question form. (Class.) Do the scholars learn well? (Teach.) Of a wish. (Class.) May the scholars learn well! (Teach) Of an exclamation. (Class.) How well the scholars learn! (Teach.) The conditional form. (Class.) If the scholars learn well; or, should the scholars learn well. (Teach.) Of necessity. (Class.) The scholars must learn well. (Teach.) Of ability. (Class.) The scholars can learn well, &c., &c. They are then taught that the direct statement is called the indicative mode of the verb; the command, the imperative mode; the conditional, the subjunctive mode; the wish, the potential mode, &c., &c.; and after this, the book is put into their hands, and they study their lesson as it stands. After this the different tenses of the several modes are taught in the same way.

5. Real instruction, or knowledge of Nature and the external world, including the first elements of the natural sciences, the arts of life, geography, and history. Instruction on this head is directed to the answering of the following questions, namely:

(*a*) What is man, as it respects his corporeal and intellectual nature?

Here come anatomy and physiology, so far as the structure of the human body is concerned, and the functions of its several parts.

Also the simple elements of mental philosophy. In this connection appropriate texts of Scripture are quoted, as Gen. ii. 7. Ps. cxxxix. 14–16. An appropriate hymn is also sung.

> "And the Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living soul."
>
> "I will praise thee: for I am fearfully and wonderfully made: marvellous are thy works; and that my soul knoweth right well. My substance was not hid from thee, when I was made in secret, and curiously wrought in the lowest parts of the earth. Thine eyes did see my substance, yet being imperfect; and in thy book all my members were written, which in continuance were fashioned, when as yet there was none of them."

(*b*) What does man need for the preservation and cheerful enjoyment of life, as it respects his body and mind? For his body he needs *food;* the different kinds of food, and the mode of preparing them, are here brought to view; the unwholesomeness of some kinds of food; injuriousness of improper food; cooking;

evils of gluttony. The different kinds of clothing and modes of preparing them; what sort of dress is necessary to health; folly and wickedness of vanity and extravagance. *Dwellings*, materials of which houses are constructed; mode of constructing them; different trades employed in their construction.

For the mind, man needs *society*, the family and its duties; the neighborhood and its duties. Intellectual, moral, and religious cultivation; the school and its duties; the church and its duties. For the body and mind both, he needs *security* of person and property; the government; the legislature; the courts, &c.

(*c*) Where and how do men find the means to supply their wants, and make themselves comfortable and happy in this life?

The vegetable, the mineral, and the animal kingdoms are here brought to view, for materials; together with agriculture and manufactures, as the means of converting these materials to our use. Geography, with special reference to the productions of countries, and their civil, literary, and religious institutions; towns, their organization and employments. Geography is sometimes taught by blank charts, to which the students are required to affix the names of the several countries, rivers, mountains, principal towns, &c., and then state the productions and institutions for which they are remarkable. Sometimes the names of countries, rivers, &c., are given, and the pupil is required to construct an outline chart of their localities.

In respect to all the above points, the native country is particularly studied; its capabilities, its productions, its laws, its institutions, its history, &c., are investigated, with especial reference to its ability of supplying the physical, social, and moral wants of its inhabitants. Under this head the pupils are taught to appreciate their native country, to venerate and love its institutions, to understand what is necessary to their perfection, and to imbibe a spirit of pure and generous patriotism. It is scarcely necessary to add, that all the instruction under this fifth head is confined to the fundamental and simplest principles of the several branches referred to.

6. Arithmetic, continued through fractions and the rules of proportion.
7. Geometry, doctrine of magnitudes and measures.
8. Singing, and science of vocal and instrumental music.

IV. *Fourth part, of two years—children from twelve to fourteen.*

1. Religious instruction, in the religious observation of Nature, the life and discourses of Jesus Christ, the history of the Christian religion, in connection with the cotemporary civil history, and the principal doctrines of the Christian system.

The first topic of instruction mentioned under this head is one of peculiar interest and utility. The pupils are taught to observe, with care and system, the various powers and operations of Nature, and to consider them as so many illustrations of the wisdom, power, and goodness of the Creator; and at each lesson they are directed to some appropriate passage of the Bible, which they read and commit to memory: and thus the idea is continually impressed on them, that the God of Nature and the God of the Bible are one and the same Being.

For example, as introductory to the whole study, the first chapter of Genesis, together with some other appropriate passage of Scripture, as the 147th Psalm, or the 38th chapter of Job, may be read and committed to memory. The surface of the earth, as illustrating the power and wisdom of God, may be taken as a lesson. Then the varieties of surface, as mountains, valleys, oceans and rivers, continents and islands, the height of mountains, the breadth of oceans, the length of rivers, remarkable cataracts, extended caverns, volcanoes, tides, &c., may be taken into view, and the teacher may impress upon the class the greatness, power, and intelligence necessary for such a creation. The whole is fortified by the application of such a passage as Psalm civ. 1–13.

> "Bless the Lord, O my soul! O Lord my God! thou art very great; thou art clothed with honor and majesty. Who coverest thyself with light as with a garment: who stretchest out the heavens like a curtain: who layeth the beams of his chambers in the waters: who maketh the clouds his chariot: who walketh upon the wings of the wind: who maketh his angels spirits; his ministers a flaming fire. Who laid the foundations of the earth, that it should not be removed forever. Thou coverest it with the deep as with a garment: the waters stood above the mountains. At thy rebuke they fled: at the voice of thy thunder they hasted away. They go up by the mountains; they go down by the valleys unto the place which thou hast founded for them. Thou hast set a bound that they may not pass over; that they turn not again to cover the earth. He sendeth the springs into the valleys,

which run among the hills. They give drink to every beast of the field; the wild asses quench their thirst. By them shall the fowls of the heaven have their habitation, which sing among the branches. He watereth the hills from his chambers: the earth is satisfied with the fruit of thy works."

"O Lord, how manifold are thy works! in wisdom hast thou made them all: the earth is full of thy riches. So is this great and wide sea, wherein are things creeping innumerable, both small and great beasts. There go the ships: there is that leviathan, whom thou hast made to play therein."

The fruitfulness and beauty of the earth, as illustrating the wisdom and goodness of God, may serve as another lesson. Here may be exhibited the beauty and variety of the plants and flowers with which the earth is adorned; the manner of their growth and self-propagation, their utility to man and beast, their immense number and variety, their relations to each other as genera and species; trees and their varieties, their beauty and utility, their timber and their fruit; and, in connection with this lesson, Psalm civ. 14–34 may be committed to memory.

"He causeth the grass to grow for the cattle, and herb for the service of man: that he may bring forth food out of the earth; and wine that maketh glad the heart of man, and oil to make his face to shine, and bread which strengtheneth man's heart. The trees of the Lord are full of sap; the cedars of Lebanon, which he hath planted; where the birds make their nests: as for the stork, the fir trees are her house. The high hills are a refuge for the wild goats; and the rocks for the conies. He appointeth the moon for seasons: the sun knoweth his going down. Thou maketh darkness, and it is night: wherein all the beasts of the forest do creep forth. The young lions roar after their prey, and seek their meat from God. The sun ariseth, they gather themselves together, and lay them down in their dens. . Man goeth forth unto his work and to his labor until the evening."

"These wait all upon thee; that thou mayest give them their meat in due season. That thou givest them they gather; thou openest thine hand, they are filled with good. Thou hidest thy face, they are troubled: thou takest away their breath, they die, and return to their dust. Thou sendest forth thy Spirit, they are created: and thou renewest the face of the earth. The glory of the Lord shall endure forever: the Lord shall rejoice in his works. He looketh on the earth, and it trembleth: he toucheth the hills, and they smoke. I will sing unto the Lord as long as I live: I will sing praise to my God while I have my being. My meditation of him shall be sweet: I will be glad in the Lord."

In like manner, the creation and nourishment, the habits and instincts of various animals may be contémplated, in connection with Proverbs vi. 6–8; Psalm civ. 17–22; Proverbs xxx. 24–31; Gen. i. 20–24; Psalm cxlv. 15–16.

"Go to the ant, thou sluggard! consider her ways, and be wise: Which having no guide, overseer, or ruler, provideth her meat in the summer, and gathereth her food in the harvest."

"There be four things which are little on the earth, but they are exceeding wise: the ants are a people not strong, yet they prepare their meat in the summer; the conies are but a feeble folk, yet make they their houses in the rocks; the locusts have no king, yet go they forth all of them by bands; the spider taketh hold with her hands, and is in kings' palaces. There be three things which go well, yea, four are comely in going: a lion, which is strongest among beasts, and turneth not away for any: a grayhound; a he-goat also; and a king, against whom there is no rising up."

"And God said, Let the earth bring forth the living creature after his kind, cattle, and creeping thing, and beasts of the earth after his kind: and it was so. And God made the beast of the earth after his kind, and cattle after their kind, and every thing that creepeth upon the earth after his kind: and God saw that it was good."

"The eyes of all wait upon thee; and thou givest them their meat in due season. Thou openest thine hand, and satisfiest the desire of every living thing. The Lord is righteous in all his ways, and holy in all his works."

The phenomena of light and color, the nature of the rainbow, &c., may make another interesting lesson, illustrating the unknown forms of beauty and glory which exist in the Divine Mind, and which He may yet develope in other and still more glorious worlds; in connection with Gen. i. 3, 5, 9, 13, 14, and other passages of like kind.

So the properties of the air, wind, and storm, Job xxviii. 25; xxxviii. 33, 34, 35. Psalm cxlviii. 8.

"Knowest thou the ordinance of heaven? canst thou set the dominion thereof in the earth? Canst thou lift up thy voice to the clouds, that abundance of waters may cover thee? Canst thou send lightnings, that they may go, and say unto thee, Here we are? Who hath put wisdom in the inward parts? or who hath given understanding to the heart? Who can number the clouds in wisdom? or who can stay the bottles of heaven?"

Then the heavens, the sun, moon, planets, fixed stars, and comets, the whole science of astronomy, so far as it can be introduced with advantage into common schools, can be contemplated in the same way. The enlightening, elevating, and purifying moral influence of such a scheme of instruction, carried through the whole system of Nature, must be clearly obvious to every thinking mind; and its utility, considered merely with reference to worldly good, is no less manifest.

The second topic of religious instruction is more exclusively scriptural. The life of Christ, and the history of the apostles, as given in the New Testament, are chronologically arranged, and tables formed as before. (III. 3.) The discourses of Christ are examined and explained in their chronological arrangement, and in the same way the discourses and epistles of the apostles. The history of Christianity, in connection with the cotemporary civil history, is taught in a series of conversational lectures. To conclude the whole course of religious instruction, a summary of the Christian doctrine is given in the form of some approved catechism.

2. Knowledge of the world and of mankind, including civil society, constitutional law, agriculture, mechanic arts, manufactures, &c.

This is a continuation and completion, in a more systematic form, of the instruction commenced in III. 5. The course begins with the family, and the first object is to construct a habitation. The pupil tells what materials are necessary for this purpose, where they are to be found, how brought together and fitted into the several parts of the building. The house must now be furnished. The different articles of furniture and their uses are named in systematic order, the materials of which they are made, and the various trades employed in making them are enumerated. Then comes the garden, its tools and products, and whatever else is necessary for the subsistence and physical comfort of a family. Then the family duties and virtues; parental and filial obligation and affection; rights of property; duties of neighborhoods; the civil relations of society; the religious relations of society; the state, the father-land, &c.; finally, geography, history, and travels. Books of travels are compiled expressly for the use of schools, and are found to be of the highest interest and utility.

3. Language, and exercises in composition.

The object here is to give the pupils a perfect command of their native tongue, and ability to use it on all occasions with readiness and power. The first exercises are on simple questions, such as—"Why ought children to love and obey their parents?" or they are short descriptions of visible objects, such as a house, a room, a garden, &c. There are also exercises on the various forms of expressing the same idea, as, "The sun enlightens the earth." "The earth is enlightened by the sun." "The sun gives light to the earth." "The earth receives light from the sun." "The sun is the source of light to the earth." "The sun sends out its rays to enlighten the earth." "The earth is enlightened by rays sent out from the sun," &c. There are exercises also of the same sort on metaphors and other figures of speech. Familiar letters are then written, and short essays on themes such as may be furnished by texts from the Book of Proverbs, and other sentences of the kind; and thus gradual advancement is made to all the higher and graver modes of composition.

4. Application of arithmetic and the mathematics to the business of life, including surveying, civil engineering, &c.

The utility of this branch of instruction, and the mode of it, after what has already been said, are probably too obvious to need any further illustration.

5. Elements of drawing.

For this the pupils have already been prepared by the exercises in ornamental writing, in the previous part of the course. They have already acquired that accuracy of sight and steadiness of hand which are among the most essential requisites to drawing well. The first exercises are in drawing lines, and the most simple mathematical figures, such as the square, the cube, the triangle, the parallelogram; generally from wooden models, placed at some little distance on a shelf, before the class. From this they proceed to architectural figures, such as doors, windows, columns, façades. Then the figures of animals, such as a horse, a cow, an elephant; first from other pictures, and then from Nature. A plant, a rose, or some flower is placed upon a shelf, and the class make a picture of it. From this they proceed to landscape painting, historical painting, and the higher branches of the art, according to their time and capacity. All learn enough of drawing to use it in the common business of life, such as plotting a field, laying out a canal, or drawing the plan of a building; and many attain to a high degree of excellence.

6. Exercises in singing, and the science of music.

The instructions of the previous parts are extended as far as possible, and include singing and playing at sight, and the more abstruse and difficult branches of the science and art of music.

The following extracts from Hon. Horace Mann's Seventh Annual Report to the Board of Education in Massachusetts, will supply some deficiences in the foregoing sketch, and, at the same time, present the impressions of another observer.

CLASSIFICATION.

The first element of superiority in a Prussian school, and one whose influence extends throughout the whole subsequent course of instruction, consists in the proper classification of the scholars. In all places where the numbers are sufficiently large to allow it, the children are divided according to ages and attainments; and a single teacher has the charge only of a single class, or of as small a number of classes as is practicable. I have before adverted to the construction of the school-houses, by which, as far as possible, a room is assigned to each class. Let us suppose a teacher to have the charge of but one class, and to have talent and resources sufficient properly to engage and occupy its attention, and we suppose a perfect school. But how greatly are the teacher's duties increased, and his difficulties multiplied, if he have four, five, or half a dozen classes, under his personal inspection. While attending to the recitation of one, his mind is constantly called off, to attend to the studies and the conduct of all the others. For this, very few teachers amongst us have the requisite capacity; and hence the idleness and the disorder that reign in so many of our schools, excepting in cases where the debasing motive of fear puts the children in irons. All these difficulties are at once avoided by a suitable classification; by such a classification as enables the teacher to address his instructions at the same time to all the children who are before him, and to accompany them to the play-ground, at recess or intermission, without leaving any behind who might be disposed to take advantage of his absence. All this will become more and more obvious as I proceed with a description of exercises. There is no obstacle whatever, save prescription, and that *vis inertia* of mind which continues in the beaten track because it has not vigor enough to turn aside from it, to the introduction, at once, of this mode of dividing and classifying scholars, in all our large towns.

METHOD OF TEACHING YOUNG CHILDREN ON THEIR FIRST ENTERING SCHOOL.

In regard to this as well as other modes of teaching, I shall endeavor to describe some particular lessons that I heard. The Prussian and Saxon schools are all conducted substantially upon the same plan, and taught in the same manner. Of course, there must be those differences to which different degrees of talent and experience give rise.

About twenty years ago, teachers in Prussia made the important discovery that children have five senses, together with various muscles and mental faculties, all which, almost by a necessity of their nature, must be kept in a state of activity, and which, if not usefully, are liable to be mischievously employed. Subsequent improvements in the art of teaching have consisted in supplying interesting and useful, instead of mischievous occupation, for these senses, muscles, and faculties. Experience has now proved that it is much easier to furnish profitable and delightful employment for all these powers, than it is to stand over them with a rod and stifle their workings, or to assume a thousand shapes of fear to guard the thousand avenues through which the salient spirits of the young play outward. Nay, it is much easier to keep the eye, and hand, and mind at work together, than it is to employ any one of them separately from the others. A child is bound to the teacher by so many more cords, the more of his natural capacities the teacher can interest and employ.

In the case I am now to describe, I entered a class-room of sixty children, of about six years of age. The children were just taking their seats, all smiles and expectation. They had been at school but a few weeks, but long enough to have contracted a love for it. The teacher took his station before them, and after making a playful remark which excited a light titter around the room, and effectually arrested attention, he gave a signal for silence. After wating a moment, during which every countenance was composed and evéry noise hushed, he made a prayer consisting of a single sentence, asking that as they had come together to learn, they might be good and diligent. He then spoke to them of the beautiful day, asked what they knew about the seasons, referred to the different kinds of fruit-trees then in bearing, and questioned them upon the uses of trees in constructing houses, furniture, &c. Frequently he threw in sportive remarks which enlivened the whole school, but without ever producing the slightest symptom of disorder. During the familiar conversation, which lasted about twenty minutes, there was nothing frivolous or trifling in the manner of the teacher; that manner was dignified though playful, and the little jets of laughter which he caused the children occasionally to throw out, were much more favorable to a receptive state of mind than jets of tears.

Here I must make a preliminary remark, in regard to the equipments of the scholars and the furniture of the school-room. Every child has a slate and pencil, and a little reading book of letters, words, and short sentences. Indeed, I never saw a Prussian or Saxon school, above an infant school, in which any child was unprovided with a slate and pencil. By the teacher's desk, and in front of the school, hung a blackboard. The teacher first drew a house upon the blackboard; and here the value of the art of drawing, a power universally possessed by Prussian teachers, became manifest. By the side of the drawing and under it, he wrote the word *house* in the German script hand, and printed it in the German letter. With a long pointing rod, the end being painted white to make it more visible, he ran over the form of the letters, the children, with their slates before them and their pencils in their hands, looking at the pointing rod and tracing the forms of the letters in the air. In all our good schools, children are first taught to imitate the forms of letters on the slate before they write them on paper; here they were first imitated on the air, then on slates, and subsequently, in older classes, on paper. The next process was to copy the word "house," both in script and in print, on their slates. Then followed the formation of the sounds of the letters of which the word was composed, and the spelling of the word. Here the *names* of the letters were not given as with us, but only their powers, or the sounds which those letters have in combination. The letter *h* was first selected and set up in the reading-frame, (the same before described as part of the apparatus of Prussian schools for young children,) instead of articulating our alphabetic *h*, (aitch,) merely gave a hard breathing; such a sound as the letter really has in the word "house." Then the dipthong, *au*, (the German word for "house" is spelled "haus,") was taken and sounded by itself, in the same way. Then the blocks containing *h*, and *au*, were brought together, and the two sounds were combined. Lastly, the letter *s* was first sounded by itself, then added to the others, and then the whole word was spoken. Sometimes the last letter in a word was first taken and sounded; after that the penultimate; and so on until the word was completed. The responses of the children were sometimes individual, and sometimes simultaneous, according to a signal given by the master.

In every such school, also, there are printed sheets or cards, containing the letters, dipthongs, and whole words. The children are taught to sound a dipthong, and then asked in what words that sound occurs. On some of these cards there are words enough to make several short sentences, and when the pupils are a little advanced, the teacher points to several isolated words in succession, which when taken together make a familiar sentence, and thus he gives them an agreeable surprise, and a pleasant initiation into reading.

After the word "house" was thus completely impressed upon the minds of the children, the teacher drew his pointing rod over the lines which formed the house; and the children imitated him, first in the air, while they were looking at his motions, then on their slates. In their drawings there was of course a great variety as to taste and accuracy; but each seemed pleased with his own, for their first attempts had never been so criticised as to produce discouragement. Several children were then called to the blackboard to draw a house with chalk. After this, the teacher entered into a conversation about houses. The first question was, what kind of a house was that on the blackboard? Then the names of other kinds of houses were given. The materials of which houses are built were mentioned stone, brick, wood; the different kinds of wood; nails, and where they were made; lime, and whence it came, &c. &c. When the teacher touched upon points with which the children were supposed to be acquainted, he asked questions; when he passed to subjects beyond their sphere, he gave information, intermingling the whole with lively remarks and pleasant anecdotes.

And here one important particular should not be omitted. In this, as well as in all other schools, a complete answer was always required. For instance, if a teacher asks, "What are houses made of?" he does not accept the answer, "of wood" or "of stone;" but he requires a full, complete, (vollständig) answer; as, "a house may be made of wood." The answer must always contain an intelligible proposition without reference to the words of the question to complete it. And here also the greatest care is taken that the answer shall always be grammatically correct, have the right terminations of all articles, adjectives and nouns, and the right grammatical transpositions according to the idioms and structure of the language. This secures from the beginning, precision in the expression of ideas; and if, as many philosophers suppose, the intellect could never carry forward its processes of argument or investigation to any great extent, without using language as its instrument, then these children, in their primary lessons, are not only led to exercise the intellect, but the instrument is put into their hands by which its operations are facilitated.

When the hour had expired, I do not believe there was a child in the room who knew or thought that his play-time had come. No observing person can be at a loss to understand how such a teacher can arrest and retain the attention of his scholars. It must have happened to almost every one, at some time in his life, to be present as a member of a large assembly, when some speaker, in the midst of great uproar and confusion, has arisen to address it. If, in the very commencement of his exordium, he makes what is called a happy hit, which is answered by a response of laughter or applause from those who are near enough to hear it, the attention of the next circle will be aroused. If, then, the speaker makes another felicitous sally of wit or imagination, this circle too becomes the willing subject of his power; until, by a succession of flashes whether of genius or of wit, he soons brings the whole audience under his command, and sways it as the sun and moon sway the tide. This is the result of talent, of attainment, and of the successful study both of men and of things; and whoever has a sufficiency of these requisites will be able to command the attention of children, just as a powerful orator commands the attention of men. But the one no more than the other is the unbought gift of nature. They are the rewards of application and toil superadded to talent.

Now it is obvious that in the single exercise above described, there were the elements of reading, spelling, writing, grammar, and drawing, interspersed with anecdotes and not a little general information; and yet there was no excessive variety, nor were any incongruous subjects forcibly brought together. There was nothing to violate the rule of "one thing at a time."

Compare the above method with that of calling up a class of abecedarians; or, what is more common, a single child, and while the teacher holds a book or a card before him, and, with a pointer in his hand, says *a*, he echoes *a;* then *b*, and he echoes *b;* and so on until the vertical row of lifeless and ill-favored characters is completed, and then of remanding him to his seat, to sit still and look at vacancy. If the child is bright, the time which passes during this lesson is the only part of the day when he does not think. Not a single faculty of the mind is occcupied except that of imitating sounds; and even the number of these imitations amounts only to twenty-six. A parrot or an idiot could do the same thing. And so of the organs and members of the body. They are condemned to inactivity; for the child who stands most like a post is most approved; nay, he is rebuked if he does not stand like a post. A head that does not turn to the right or left, an eye that lies moveless in its socket, hands hanging motionless at the side, and feet immovable as those of a statue, are the points of excellence, while the child is echoing the senseless table of a, b, c. As a general rule, six months are spent before the twenty-six letters are mastered, though the same child would learn the names of twenty-six playmates or twenty-six playthings in one or two days.

All children are pleased with the idea of a house, a hat, a top, a ball, a bird, an egg, a nest, a flower, &c.; and when their minds are led to see new relations or qualities in these objects, or when their former notions respecting them are brought out more vividly, or are more distinctly defined, their delight is even keener than that of an adult would be in obtaining a new fact in science, or in having the mist of some old doubt dispelled by a new discovery. Lessons on familiar objects, given by a competent teacher, never fail to command attention, and thus a habit of mind is induced of inestimable value in regard to all future study.

Again, the method I have described necessarily leads to conversation, and conversation with an intelligent teacher secures several important objects. It communicates information. It brightens ideas before only dimly apprehended. It addresses itself to the various faculties of the mind, so that no one of them ever tires or is cloyed. It teaches the child to use language, to frame sentences, to select words which convey his whole meaning, to avoid those which convey either more or less than he intends to express; in fine, it teaches him to seek for thoughts upon a subject, and then to find appropriate language in which to clothe them. A child trained in this way will never commit those absurd and ludicrous mistakes into which uneducated men of some sense not unfrequently fall, viz., that of mismatching their words and ideas; of hanging as it were, the garments of a giant upon the body of a pigmy, or of forcing a pigmys's dress upon the huge limbs of a giant. Appropriate diction should clothe just ideas, as a tasteful and substantial garb fits a graceful and vigorous form.

The above described exercise occupies the eye and the hand as well as the mind. The eye is employed in tracing visible differences between different forms, and the hand in copying whatever is presented, with as little difference as possible. And who ever saw a child that was not pleased with pictures, and an attempt to imitate them? Thus, the two grand objects so strenuously insisted upon by writers, in regard to the later periods of education and the maturer processes of thought, are attained, viz., the power of recognizing analogies and dissimilarities.

Having given an account of the reading lesson of a primary class, just after they had commenced going to school, I will follow it with a brief account of a lesson given to a more advanced class. The subject was a short piece of poetry describing a hunter's life in Missouri. It was first read, the reading being accompanied with appropriate criticisms as to pronunciation, tone, &c. It was then taken up verse by verse, and the pupils were required to give equivalent expressions in prose. The teacher then entered into an explanation of every part of it, in a sort of oral lecture, accompanied with occasional questions. This was done with the greatest minuteness. Where there was a geographical reference, he entered at large into geography; where a reference to a foreign custom, he compared it with their customs at home; and thus he explained every part, and illustrated the illustrations themselves, until, after an entire hour spent upon six four line verses, he left them to write out the sentiment and the story in prose, to be produced in school the next morning. All this was done without the slightest break or hesitation, and evidently proceeded from a mind full of the subject, and having a ready command of all its resources.

An account of one more lesson will close what I have to say on the subject of reading. The class consisted of young lads, belonging to a burgher school, which they were just about leaving. They had been reading a poem of Schiller; a sort of philosophical allegory; and when it was completed, the teacher called upon one of them to give a popular exposition of the meaning of the piece. The lad left his seat, stepped to the teacher's desk, and, standing in front of the school, occupied about fifteen or twenty minutes in an extemporaneous account of the poem, and what he supposed to be its meaning and moral.

ARITHMETIC AND MATHEMATICS.

Children are taught to cipher, or, if need be, to count, soon after entering school. I will attempt to describe a lesson which I saw given to a very young class. Blocks of one cube, two cubes, three cubes, &c., up to a block of ten cubes, lay upon the teacher's desk. The cubes on each block were distinctly marked off, and differently colored, that is, if the first inch or cube was white, the next would be black. The teacher stood by his desk, and in front of the class. He set up a block of one cube, and the class simultaneously said *one*. A block of two cubes was then placed by the side of the first, and the class said *two*. This was done until the ten blocks stood by the side of each other in a row. They were then counted backward, the teacher placing his finger upon them, as a signal that their respective numbers were to be called. The next exercise was, "two comes after one, three comes after two," and so on to ten; and then backward, "nine comes before ten, eight comes before nine, and so of the rest. The teacher then asked, What is three composed of? *A*. Three is composed of one and two. *Q*. Of what else is three composed? *A*. Three is composed of three ones. *Q*. What is four composed of? *A*. Four is composed of four ones, of two and two, of three and one. *Q*. What is five composed of? *A*. Five is composed of five ones, of two and three, of two twos and one, of four and one. *Q*. What numbers compose six? seven? eight? nine? To the latter the pupil would answer, "Three threes make nine; two, three, and four make nine; two, two, and five make nine; three, four, and two make nine; three, five, and one make nine," &c., &c. The teacher then placed similar blocks side by side, while the children added their respective numbers together "two twos make four;" "three twos make six," &c. The blocks were then turned down horizontally to show that three blocks of two cubes each were equal to one of six cubes. Such questions were then asked as, how many are six less than eight? five less than seven? &c. Then, how many are seven and eight? The answer was given thus: eight are one more than seven, seven and seven make fourteen, and one added makes fifteen; therefore eight and seven make fifteen. *Q*. How many are six and eight? *A*. Eight are two more than six, six and six make twelve, and two added make fourteen. Or it might be thus: six are two less than eight, eight and eight are sixteen, two taken from sixteen leave fourteen, therefore eight and six are fourteen. They then counted up to a hundred on the blocks. Toward the close of the lesson, such questions as these were put, and readily answered: Of what is thirty-eight composed? *A*. Thirty-eight is composed of thirty and eight ones; of seven fives and three ones; or sometimes thus: of thirty-seven and one; of thirty-six and two ones; of thirty-five and three ones, &c. *Q*. Of what is ninety composed? *A*. Ninety is composed of nine tens, of fifty and forty, &c., &c.

Thus, with a frequent reference to the blocks, to keep up attention by presenting an object to the eye, the simple numbers were handled and transposed in a great variety of ways. In this lesson, it is obvious that counting, numeration, addition, substraction, multiplication, and division were all included, yet there was no abstract rule, or unintelligible form of words given out to be committed to memory. Nay, these little children took the first steps in the mensuration of superficies and solids, by comparing the length and contents of one block with those of others.

When the pupils were a little further advanced, I usually heard lessons recited in this way: Suppose 4321 are to be multiplied by 25. The pupil says, five times one are five ones, and he sets down 5 in the unit's place; five times two tens, or twenty ones, are a hundred, and sets down a cipher in the ten's place; five times three hundred are one thousand and five hundred, and one hundred to be carried make one thousand six hundred, and sets down a 6 in the hundred's place; five times four thousand are twenty thousand, and one thousand to be carried make twenty-one thousand. The next figure in the multiplier is then taken, twenty times one are twenty, and a 2 is set down in the ten's place; twenty times two tens are four hundred, and a 4 is set down in the hundred's place; twenty times three hundred are six thousand, and a 6 is set down in the thousand's place; twenty times four thousand are eighty thousand, and an 8 is set down in the ten thousand's place. Then come the additions to get the product. Five ones are five, two tens are twenty, and these figures are respectively set down; four hundred and six hundred make a thousand, and a cipher is set down in the hundred's place; one thousand to be carried to six thousand makes seven thousand, and one thousand more makes eight thousand, and an 8 is set down in the thousand's place; eighty thousand and twenty thousand make one hundred thousand, and a cipher is set down in the ten thousand's place, and a 1 in the hundred thousand's place. It is easy to see that where the multiplier and multiplicand are large, this process soon passes beyond mere child's play.

So in division. If 32756 are to be divided by 75, the pupil says, how many hundred times are seventy-five, or seventy-five ones, contained in thirty-two thousand and seven hundred, or in thirty-two thousand and seven hundred ones? four hundred times, and he sets down a 4 in the hundred's place in the quotient; then the divisor seventy-five is multiplied (as before) by the four hundred, and the product is set down under the first three figures of the dividend, and there are two thousand and seven hundred remaining. This remainder is set down in the next line, because seventy-five is not contained in two thousand seven hundred any number of hundred times. And so of the residue of the process.

When there is danger that an advanced class will forget the value of the denominations they are handling, they are required to express the value of each figure in full, throughout the whole process, in the manner above described.

I shall never forget the impression which a recitation by a higher class of girls produced upon my mind. It lasted an hour. Neither teacher nor pupil had book or slate. Questions and answers were extemporaneous. They consisted of problems in Vulgar Fractions, simple and compound; in the Rule of Three, Practice, Interest, Discount, &c., &c. A few of the first were simple, but they soon increase in complication and difficulty, and in the amount of the sums managed, until I could hardly credit the report of my own senses, so difficult were the questions, and so prompt and accurate the replies.

A great many of the exercises in arithmetic consisted in reducing the coins of one State to those of another. In Germany, there are almost as many different currencies as there are States; and the expression of the value of one coin in other denominations, is a very common exercise.

It struck me that the main differences between their mode of teaching arithmetic and ours, consists in their beginning earlier, continuing the practice in the elements much longer, requiring a more thorough analysis of all questions, and in not separating the processes, or rules, so much as we do from each other. The pupils proceed less by rule, more by an understanding of the subject. It often happens to our children that while engaged in one rule, they forget a preceding. Hence, many of our best teachers have frequent reviews. But there, as I stated above, the youngest classes of children were taught addition, substraction, multiplication, and division, promiscuously, *in the same lesson.* And so it was in the later stages. The mind was constantly carried along, and the practice enlarged in more than one direction. It is a difference which results from teaching, in the one case, from a book; and in the other from the head. In the latter case the teacher sees what each pupil most needs, and, if he finds any one halting or failing on a particular class of questions, plies him with questions of that kind until his deficiencies are supplied.

In algebra, trigonometry, surveying, geometry, &c., I invariably saw the teacher standing before the blackboard, drawing the diagrams and explaining all the relations between their several parts, while the pupils, in their seats, having a pen and a small manuscript book, copied the figures, and took down brief heads of the solution; and at the next recitation they were required to go to the blackboard, draw the figures and solve the problems themselves. How different this mode of hearing a lesson from that of holding the text-book in the left hand, while the fore-finger of the right carefully follows the printed demonstration, under penalty, should the place be lost, of being obliged to recommence the solution.

GRAMMAR AND COMPOSITION.

Great attention is paid to Grammar, or, as it is usually called in the "Plan of Studies," the German language. But I heard very little of the ding-dong and recitative of gender, number and case, of government and agreement, which make up so great a portion of the grammatical exercises in our schools; and which the pupils are often required to repeat until they really lose all sense of the original meaning of the terms they use. Of what service is it for children to reiterate and reassert, fifty times in a single recitation, the gender and number of nouns, about which they never made a mistake even before a grammar book was put into their hands? If the object of grammar is to teach children to speak and write their native language with propriety, then they should be practiced upon expressing their own ideas with elegance, distinctness, and force. For this purpose, their common every day phraseology is first to be attended to. As their speech becomes more copious, they should be led to recognize those slight shades of distinction which exist between words almost synonymous; to descriminate between the literal and the figurative; and to frame sentences in which the main idea shall be brought out conspicuously and prominently, while all subordinate ones, mere matters of circumstance or qualification, shall occupy humbler or more retired positions. The sentences of some public speakers are so arranged, that what is collateral or incidental stands out boldly in the foreground, while the principal thought is almost lost in the shade; an arrangement as preposterous as if, in the senate chamber, the forum or the parade-ground, the president, the judge or the commanding officer, were thrust into the rear, while a nameless throng of non-officials and incognitos should occupy the places of dignity and authority. Grammar should be taught in such a way as to lead out into rhetoric as it regards the form of the expression, and into logic as it regards the sequence and coherency of the thoughts. If this is so, then no person is competent to teach grammar who is not familiar at least with all the leading principles of rhetoric and logic.

The Prussian teachers, by their constant habit of conversing with the pupils; by requiring a complete answer to be given to every question; by never allowing a mistake in termination, or in the collocation of words or clauses, to pass uncorrected, nor the sentence as corrected to pass unrepeated; by requiring the poetry of the reading lesson to be changed into oral or written prose, and the prose to be paraphrased, or expressed in different words; and by exacting a general account or summary of the reading lessons, are, as we may almost literally say, constantly teaching grammar; or, as they more comprehensively call it, the German language. It is easy to see that Composition is included under this head, the writing of regular "essays" or "themes" being only a later exercise.

WRITING AND DRAWING.

Such excellent handwriting as I saw in the Prussian schools, I never saw before. I can hardly express myself too strongly on this point. In Great Britian, France, or in our own country, I have never seen any schools worthy to be compared with theirs in this respect. I have before said that I found all children provided with a slate and pencil. They write or print letters, and begin with the elements of drawing, either immediately, or very soon after they enter school. This furnishes the greater part of the explanation of their excellent handwriting. A part of it, I think, should be referred to the peculiarity of the German script, which seems to me to be easier than our own. But after all due allowance is made for this advantage, a high degree of superiority over the schools of other countries remain to be accounted for. This superiority can not be attributed in any degree to a better manner of holding the pen, for I never saw so great a proportion of cases in any schools where the pen was so awkwardly held. This excellence must be referred in a great degree to the universal practice of learning to draw, contemporaneously with learning to write. I believe a child will learn both to draw and to write sooner and with more ease, than he will learn writing alone; and for this reason: the figures or objects contemplated and copied in learning to draw, are larger, more marked, more distinctive one from another, and more sharply defined with projection, angle or curve, than the letters copied in writing. In drawing there is more variety, in writing more sameness. Now the objects contemplated in drawing, *from their nature*, attract attention more readily, impress the mind more deeply, and of course will be more accurately copied than those in writing. And when the eye has been trained to observe, to distinguish, and to imitate, in the first exercise, it applies its habits with great advantage to the second.

Another reason is, that the child is taught to draw things with which he is familiar, which have some significance and give him pleasing ideas. But a child who is made to fill page after page with rows of straight marks, that look so blank and cheerless though done ever so well, has and can have no pleasing associations with his work. The practice of beginning with making inexpressive marks, or with writting unintelligible words, bears some resemblanee, in its lifelessness, to that of learning the alphabet. Each exhales torpor and stupidity to deaden the vivacity of the worker.

Again, I have found it an almost universal opinion with teachers of the art of writing, that children should commence with large hand rather than with fine. The reason for this I suppose to be, that where the letters themselves are larger, their differences and peculiarities are proportionally large; hence they can be more easily discriminated, and discrimination must necessarily precede exact copying. So to speak, the child becomes acquainted with the physiognomy of the large letters more easily than with that of the small. Besides, the formation of the larger gives more freedom of motion to the hand. Now, in these respects, there is more difference between the objects used in drawing and the letters of a large hand, than between the latter and fine hand; and therefore the argument in favor of a large hand, applies with still more force in favor of drawing.

In the course of my tour, I passed from countries where almost every pupil in every school could draw with ease, and most of them with no inconsiderable degree of beauty and expression, to those where less and less attention was paid to the subject; and, at last, to schools where drawing was not practiced at all; and, after many trials, I came to the conclusion, that, with no other guide than a mere inspection of the copy books of the pupils, I could tell whether drawing were taught in the school or not; so uniformly superior was the handwriting in those schools where drawing was taught in connection with it. On seeing this, I was reminded of that saying of Pestalozzi, somewhat too strong, that "without drawing there can be no writing."

But suppose it were otherwise, and that learning to draw retarded the acquisition of good penmanship, how richly would the learner be compensated for the sacrifice. Drawing, of itself, is an expressive and beautiful language. A few strokes of the pen or pencil will often represent to the eye what no amount of words, however well chosen, can communicate. For the master architect, for the engraver, the engineer, the pattern designer, the draughtsman, moulder, machine builder, or head mechanic of any kind, all acknowledge that this art is essential and indispensable. But there is no department of business or condition in life, where the accomplishment would not be of utility. Every man should be able to plot a field, to sketch a road or a river, to draw the outlines of a simple machine, a piece of household furniture, or a farming utensil, and to delineate the internal arrangement or construction of a house.

But to be able to represent by lines and shadows what no words can depict, is only a minor part of the benefit of learning to draw. The study of this art develops the talent of observing, even more than that of delineating. Although a man may has but comparatively few occasions to picture forth what he has observed, yet the power of observation should be cultivated by every rational being. The skillful delineator is not only able to describe far better what he has seen, but he sees twice as many things in the world as he would otherwise do. To one whose eyes have never been accustomed to mark the form, color or peculiarities of objects, all external nature is enveloped in a haze, which no sunshine, however bright, will ever dissipate. The light which dispels this obscurity must come from within. Teaching a child to draw, then, is the development in him of a new talent the conferring upon him, as it were, of a new sense by means of which he is not only better enabled to attend to the common duties of life, and to be more serviceable to his fellow-men, but he is more likely to appreciate the beauties and magnificence of nature, which every where reflect the glories of the Creator into his soul. When accompanied by appropriate instruction of a moral and religious character, this accomplishment becomes a quickener to devotion.

With the inventive genius of our people, the art of drawing would be eminently useful. They would turn it to better account than any other people in the world. We now perform far the greater part of our labor by machinery. With the high wages prevalent amongst us, if such were not the case, our whole community would be impoverished. Whatever will advance the mechanic and manufacturing arts, therefore, is especially important here; and whatever is important for men to know, as men, should be learned by children in the schools.

But whatever may be said of the importance of this art, as it regards the community at large, its value to a school-teacher can hardly be estimated.

If the first exercises in reading were taught as they should be; if the squares of the multiplication table were first to be drawn on the blackboard, and then to be filled up by the pupils, as they should see on what reason the progressive increase of the numbers is founded; if geography were taught from the beginning, as it should be, by constant delineations upon the blackboard; then every teacher, even of the humblest school, ought to be acquainted with the art of linear drawing, and be able to form all the necessary figures and diagrams not only with correctness but with rapidity. But in teaching navigation, surveying, trigonometry, geometry, &c.; in describing the mechanical powers, in optics, in astronomy, in the various branches of natural philosophy, and especially in physiology, the teacher who has a command of this art, will teach incomparably better, and incomparably faster than if he were ignorant of it. I never saw a teacher in a German school make use of a ruler or any other mechanical aid, in drawing the most nice or complicated figures. I recollect no instance in which he was obliged to efface a part of a line because it was too long, or to extend it because it was too short. If squares or triangles were to be formed, they came out squares or triangles without any overlapping or deficiency. Here was not only much time gained, or saved, but the pupils had constantly before their eyes these examples of celerity and perfectness, as models for imitation. No one can doubt how much more correctly, as well as more rapidly, a child's mind will grow in view of such models of ease and accuracy, than if only slow, awkward, and clumsy movements are the patterns constantly held before it.

I saw handwriting taught in various ways. The most common mode for young children was that of writing on the blackboard for their imitation. In such cases, the copy was always beautifully written, and the lesson preceded by instructions and followed by corrections.

Another method which has had some currency in Germany, is this: If the mark to be copied is a simple straight line, thus, / /, the teacher says *one*, *one*, as words of command; and at each enunciation of the word, the pupils make a mark simultaneously. The teacher accelerates or retards his utterance according to the degree of facility the class has acquired. If the figure to be copied consists of an upward and downward stroke, thus, 7 7, the teacher says, *one*, *two*; *one*, *two*, (one for the upward, the other for the downward motion of the hand;) at first slowly, afterwards more rapidly. When the figure consists of three strokes, thus ı, he pronounces *one*, *two*, *three*, as before. Letters are formed in the same way.

A supposed advantage of this method consists in its retarding the motions of those who would otherwise write too fast, and hastening those who would write too slow. But for these purposes, the teacher must see that all keep time, otherwise the advantage is lost. And, on the whole, there is so much difference between the natural quickness of perception and of motion in different pupils, that there can be no such thing as a universal standard. Some scholars, whose thoughts and muscles are of electric speed, would be embarrassed by being obliged to write slowly; and others could not keep step, though the music played only common time. Neither in their physical nor in their spiritual natures, does the speed of children seem to have been graduated by any one clock.

In the schools I saw, orthography, punctuation, and the use of capitals, were early connected with the exercise of writing.

GEOGRAPHY.

The practice seemed to be uniform, however, of beginning with objects perfectly familiar to the child; the school-house with the grounds around it, the home with its yards or gardens, and the street leading from the one to the other. First of all, the children were initiated into the idea of space, without which we can know no more of geography than we can of history without ideas of time. Mr. Carl Ritter, of Berlin, probably the greatest geographer now living, expressed a decided opinion to me, that this was the true mode of beginning.

Children, too, commence this study very early; soon after entering school; but no notions are given them which they are not perfectly able to comprehend, reproduce, and express.

I found geography taught almost wholly from large maps suspended against the walls, and by delineations on the blackboard. And here, the skill of teachers and pupils in drawing did admirable service. The teacher traced the outlines of a country on the suspended map, or drew one upon the blackboard, accompanying the exhibition by an oral lecture; and, at the next recitation, the pupils were expected to repeat what they had seen and heard. And, in regard to the natural divisions of the earth, or the political boundaries of countries, a pupil was not considered as having giving any proof that he had a correct image in his mind, until he could go to the blackboard, and reproduce it from the ends of his fingers. I witnessed no lesson unaccompanied by these tests.

I will describe, as exactly as I am able, a lesson which I heard given to a class a little advanced beyond the elements; remarking that, though I heard many lessons giving on the same plan, none of them were signalized by the rapidity and effect of the one I am about to describe.

The teacher stood by the blackboard, with the chalk in his hand. After casting his eye over the class to see that all were ready, he struck at the middle of the board. With a rapidity of hand which my eye could hardly follow, he made a series of those short, divergent lines, or shadings, employed by map-engravers to represent a chain of mountains. He had scarcely turned an angle, or shot off a spur, when the scholars began to cry out, Carpathian mountains, Hungary; Black Forest mountains, Wurtemberg; Giant's mountains, (Riesen-Gebirge,) Silesia; Metallic mountains, (Erz-Gebirge,) Pine mountains, (Fichtel-Gebirge,) Central mountains, (Mittel-Gebirge,) Bohemia, &c., &c.

In less than half a minute, the ridge of that grand central elevation which separates the waters that flow north-west into the German ocean, from those that flow north into the Baltic, and south-east into the Black Sea, was presented to view; executed almost as beautifully as an engraving. A dozen crinkling strokes, made in the twinkling of an eye, represented the head-waters of the great rivers which flow in different directions from that mountainous range; while the children, almost as eager and excited as though they had actually seen the torrents dashing down the mountain sides, cried out, Danube, Elbe, Vistula, Oder, &c. The next moment I heard a succession of small strokes or taps, so rapid as to be almost indistinguishable, and hardly had my eye time to discern a large number of dots made along the margins of the rivers, when the shout of Lintz, Vienna, Prague, Dresden, Berlin, &c., struck my ear. At this point in the exercise, the spot which had been occupied on the blackboard was nearly a circle, of which the starting point, or place where the teacher first began, was the center; but now a few additional strokes around the circumference of the incipient continent, extended the mountain ranges outwards toward the plains; the children responding the names of the countries in which they respectively lay. With a few more flourishes the rivers flowed onwards toward their several terminations, and by another succession of dots, new cities sprang up along their banks. By this time the children had become as much excited as though they had been present at a world-making. They rose in their seats, they flung out both hands, their eyes kindled, and their voices became almost vociferous as they cried out the names of the different places, which, under the magic of the teacher's crayon, rose into view. Within ten minutes from the commencement of the lesson, there stood upon the blackboard a beautiful map of Germany, with its mountains, principal rivers and cities, the coast of the German ocean, of the Baltic and the Black seas; and all so accurately proportioned, that I think only slight errors would have been found had it been subjected to the test of a scale of miles. A part of this time was taken up in correcting a few mistakes of the pupils; for the teacher's mind seemed to be in his ear as well as in his hand, and notwithstanding the astonishing celerity of his movements, he detected erroneous answers and turned round to correct them. The rest of the recitation consisted in questions and answers respecting productions, climate, soil, animals, &c., &c.

Many of the cosmogonists suppose that after the creation of the world, and when its whole surface was as yet fluid, the solid continents rose gradually from beneath the sea: first the loftiest peak of the Andes, for instance, emerged from the deep, and as they reached a higher and a higher point of elevation, the rivers began to flow down their sides, until at last—the lofty mountains having attained their height, the mighty rivers their extent and volume, and the continent its amplitude—cultivation began, and cities and towns were built. The lesson I have described was a beautiful illustration of that idea, with one advantage over the original scene itself, that the spectator had no need of waiting through all the geological epochs to see the work completed.

Compare the effect of such a lesson as this, both as to the amount of the knowledge communicated, and the vividness and of course the permanence of the ideas obtained, with a lesson where the scholars look out a few names of places on a lifeless atlas, but never send their imaginations abroad over the earth; and where the teacher sits listlessly down before them to interrogate them from a book, in which all the questions are printed at full length, to supersede on his part all necessity of knowledge.

EXERCISES IN THINKING. KNOWLEDGE OF NATURE. KNOWLEDGE OF THE WORLD. KNOWLEDGE OF SOCIETY.

In the "Study-Plans" of all the schools in the north of Prussia, I found most, and in some of them all of the above subjects of lessons. To each was assigned its separate hour and place in the routine of exercises. For brevity's sake, however, and because the topics naturally run into each other, I shall attempt to describe them together.

These lessons consisted of familiar conversations between teacher and pupils, on subjects adapted to the age, capacities, and proficiency of the latter. With the youngest classes, things immediately around them; the school-room and the materials of which it had been built; its different parts, as foundation, floor, walls, ceiling, roof, windows, doors, fireplace; its furniture and apparatus; its books, slates, paper; the clothes of the pupils, and the materials from which they were made; their food and play-things; the duties of children to animals, to each other, to their parents, neighbors, to the old, to their Maker; these are specimens of a vast variety of subjects embraced under one or another of the above heads. As the children advanced in age and attainments, and had acquired full and definite notions of the visible and tangible existences around them, and also of time and space, so that they could understand descriptions of the unseen and the remote, the scope of these lessons was enlarged, so as to take in the different kingdoms of nature, the arts, trades and occupations of men, and the more complicated affairs of society.

When visiting the schools in Leipsic, I remarked to the superintendent, that most accomplished educationist, Dr. Vogel, that I did not see on the "Study-Plan" of his schools, the title, "Exercises in Thinking." His reply was, "No; for I consider it a *sin* in any teacher not to lead his pupil to think, in regard to all the subjects he teaches." He did not call it an omission or even a disqualification in a teacher, if he did not awaken thought in the minds of his pupils, but he peremptorily denounced it as a "*sin*." Alas! thought I, what expiation will be sufficient for many of us who have had charge of the young!

It is obvious from the account I have given of these primary lessons, that there is no restriction as to the choice of subjects, and no limits to the extent of information that may be engrafted upon them. What more natural than that a kind teacher should attempt to gain the attention and win the good will of a brisk, eager-minded boy just entering his school, by speaking to him about the domestic animals which he plays with, or tends at home; the dog, the cat, the sheep, the horse, the cow? Yet, without any interruption or overleaping of natural boundaries, this simple lesson may be expanded into a knowledge of all quadrupeds, their characteristics and habits of life, the uses of their flesh, skins, fur, bones, horns, or ivory, the parts of the world where they live, &c., &c. So if a teacher begins to converse with a boy about domestic fowls, there is no limit, save in his own knowledge, until he has exausted the whole subject of ornithology; the varieties of birds, their plumage, their uses, their migratory habits, &c., &c. What more natural than that a benevolent teacher should ask a blushing little girl about the flowers in her vases, or garden at home? and yet, this having been done, the door is opened that leads to all botanical knowledge, to the flowers of all the seasons, and all the zones, to the trees cultivated by the hand of man, or the primeval forests that darken the face of continents. Few children go to school who have not seen a fish; at least, a minnow in a pool. Begin with this, and nature opposes no barrier until the wonders of the deep are exhausted. Let the school-house, as I have said, be the first lesson, and to a mind replenished with knowledge, not only all the different kinds of edifices—the dwelling-house, the church, the court-house, the palace, the temple—are at once associated; but all the different orders of architecture, Corinthian, Ionic, Doric, Egyptian, Gothic, &c., rise to the view. How many different materials have been brought together for the construction of the school-house; stone, wood, nails, glass, bricks, mortar, paints, materials used in glazing, &c., &c. Each one of these belongs to a different department of nature; and when an accomplished teacher has once set foot in any one of these provinces, he sees a thousand interesting objects around him, as it were soliciting his attention. Then each one of these materials has its artificer; and thus all the mechanical trades may be brought under consideration; the house builder's, the mason's, the plumber's, the glazier's, the locksmith's &c. A single article may be viewed under different aspects; as, in speaking of a lock, one may consider the nature and properties of iron; its cohesiveness, malleability, &c., its utility, or the variety of utensils into which it may be wrought; or the conversation may be turned to the particular object and uses of the lock, and upon these a lesson on the rights of property, the duty of honesty, the guilt of theft and robbery, &c., be engrafted. So in speaking of the beauties and riches and wonders of nature—of the revolution of the seasons, the glory of spring, the exuberance of autumn, the grandeur of the mountain, the magnificence of the firmament—the child's mind may be turned to a contemplation of the power and goodness of God. I found these religious aspects of nature to be most frequently adverted to: and was daily delighted with the reverent and loving manner in which the name of the Deity was always spoken, "*Der liebe Gott*," the *dear* God, was the universal form of expression; and the name of the Creator of heaven and earth was hardly ever spoken, without this epithet of endearment.

It is easy also to see that a description of the grounds about the school-house or the paternal mansion, and of the road leading from one of these places to the other, is the true starting point of all geographical knowledge; and, this once begun, there is no terminus, until all modern and ancient geography, and all travels and explorations by sea and land, are exhausted. So the boy's nest of marbles may be the nucleus of all mineralogy; his top, his kite, his little wind-wheel or water-wheel, the salient point of all mechanics and technology; and the stories he has heard about the last king or the aged king, the first chapter in universal history.

I know full well that the extent and variety of subjects said to be taught to young children in the Prussian schools, have been often sneered at.

In a late speech, made on a public occasion, by one of the distinguished politicians in our country, the idea of teaching the natural sciences in our common schools was made a theme for ridicule. Let it be understood in what manner an accomplished teacher may impart a great amount of useful knowledge on these subjects, and perhaps awaken minds which may hereafter adorn the age, and benefit mankind by their discoveries, and it will be easily seen to which party the ridicule most justly attaches. "What," says the objectors, "teach children botany, and the unintelligible and almost unspeakable names, Monandria, Diandria, Triandria, &c.; or zoology, with such technical terms as Mollusca, Crustacea, Vertebrata, Mammalia, &c., the thing is impossible!" The Prussian children are not thus taught. For years, their lessons are free from all the technicalities of science. The knowledge they already possess about common things is made the nucleus around which to collect more; and the language with which they are already familiar becomes the medium through which to communicate new ideas, and by which, whenever necessary, to explain new terms. There is no difficulty in explaining to a child, seven years of age, the distinctive marks by which nature intimates to us, at first sight, whether a plant is healthful or poisonous; or those by which, on inspecting the skeleton of an animal that lived thousands of years ago, we know whether it lived upon grass, or grain, or flesh. It is in this way that the pupil's mind is carried forward by an actual knowledge of things, until the time arrives for giving him classifications and nomenclatures. When a child knows a great many particular or individual things, he begins to perceive resemblances between some of them; and they then naturally assort themselves, as it were, in his mind, and arrange themselves into different groups. Then, by the aid of a teacher, he perfects a scientific classification among them, bringing into each group all that belong to it. But soon the number of individuals in each group becomes so numerous, that he wants a cord to tie them together, or a vessel in which to hold them. Then, from the nomenclature of science, he receives a name which binds all the individuals of that group into one, ever afterwards. It is now that he perceives the truth and the beauty of classification and nomenclature. An infant that has more red and white beads than it can hold in its hands, and to prevent them from rolling about the floor and being lost, collects them together, putting the white in one cup and the red in another, and sits and smiles at its work, has gone through with precisely the same description of mental process that Cuiver and Linneus did, when they summoned the vast varieties of the animal and vegetable kingdoms into their spiritual presence, and commanded the countless hosts to arrange themselves into their respective genera, orders, and species.

Our notions respecting the expediency or propriety of introducing the higher branches, as they are called, into our common schools, are formed from a knowledge of our own school teachers, and of the habits that prevail in most of the schools themselves. With us, it too often happens that if a higher branch, geometry, natural philosophy, zoology, botany, is to be taught, both teacher and class must have text-books. At the beginning of these text-books, all the technical names and definitions belonging to the subject are set down. These, before the pupil has an practical idea of their meaning, must be committed to memory. The book is then studied chapter by chapter. At the bottom of each page, or at the ends of the sections, are questions printed at full length. At the recitations, the teacher holds on by these leading-strings. He introduces no collateral knowledge. He exhibits no relation between what is contained in the book, and other kindred subjects, or the actual business of men and the affairs of life. At length the day of examination comes. The pupils rehearse from memory with a suspicious fluency; or, being asked for some useful application of their knowledge, some practical connection between that knowledge and the concerns of life, they are silent, or give some ridiculous answer, which at once disparages science and gratifies the ill-humor of some ignorant satirist. Of course, the teaching of the higher branches falls into disrepute in the minds of all sensible men, as, under such circumstances, it ought to do. But the Prussian teacher has no book. He needs none. He teaches from a full mind. He cumbers and darkens the subject with no technical phraseology. He observes what proficiency the child has made, and then adapts his instructions, both in quality and amount, to the necessity of the case. He answers all questions. He solves all doubts. It is one of his objects, at every recitation, so to present ideas, that they shall start doubts and provoke questions. He connects the subject of each lesson with all kindred and collateral ones; and shows its relations to the every-day duties and business of life; and should the most ignorant man, or the most destitute vagrant in society, ask him "of what use such knowledge can be?" he will prove to him, in a word, that some of his own pleasures or means of subsistence are dependent upon it, or have been created or improved by it.

In the meantime, the children are delighted. Their preceptive powers are exercised. Their reflecting faculties are developed. Their moral sentiments are cultivated. All the attributes of the mind within, find answering qualities in the world without. Instead of any longer regarding the earth as a huge mass of dead matter, without variety and without life, its beautiful and boundless diversities of substance, its latent vitality and energies, gradually drawn forth, until, at length, they illuminate the whole soul, challenging its admiration for their utility, and its homage for the bounty of their Creator.

There are other points pertaining to the qualification of teachers, which would perhaps strike a visitor or spectator more strongly than the power of giving the kind of lessons I have described; but probably there is nothing which, at the distance of four thousand miles, would give to a reader or hearer so adequate an idea of intelligence and capacity, as a full understanding of the scope and character of this class of exercises. Suppose, on the one hand, a teacher to be introduced into a school, who is competent to address children on this great range and variety of subjects, and to address them in such a manner as to arouse their curiᴊsity, command their attention, and supply them not only with knowledge, but with an inextinguishable love for it; suppose such a teacher to be able to give one, and sometimes two such lessons a day, that is, from two hundred to four hundred lessons in a year, to the same class, and to carry his classes, in this way, through their eight years schooling. On the other hand, suppose a young man coming fresh from the plow, the workshop, or the anvil; or, what is no better, from Greek and Latin classics, and suppose his knowledge on the above enumerated subjects to be divided into four hundred, or even into two hundred parts, and that only one two-hundredth portion of that stock of knowledge should be administered to the children in a day. Let us suppose all this, and we shall have some more adequate idea of the different advantages of children, at the present time, in different parts of the world. In Prussia, the theory, and the practice under it, are, not that three years' study under the best masters qualifies a talented and devoted man to become a teacher, but that three years' of such *general* preparation may qualify one for that *particular* and *daily* preparation which is to be made before meeting a class in school. And a good Prussian teacher no more thinks of meeting his classes without this daily preparation, than a distinguished lawyer or clergyman amongst ourselves would think of managing a cause before court and jury, or preaching a sermon, without special reading and forethought.

It is easy to see, from the above account, how such a variety of subjects can be taught simultaneously in school, without any interference with each other; nay, that the "common bond," which, as Cicero says, binds all sciences together, should only increase their unity as it enlarges their number.

BIBLE HISTORY AND BIBLE KNOWLEDGE.

Nothing receives more attention in the Prussian schools than the Bible. It is taken up early and studied systematically. The great events recorded in the Scriptures of the Old and New Testament; the character and lives of those wonderful men, who, from age to age, were brought upon the stage of action, and through whose agency the future history and destiny of the race were to be so much modified; and especially, those sublime views of duty and of morality which are brought to light in the Gospel, these are topics of daily and earnest inculcation, in every school. To these, in some schools, is added the history of the Christian religion, in connection with cotemporary civil history. So far as the Bible lessons are concerned, I can ratify the strong statements made by Professor Stowe, in regard to the absence of sectarian instruction, or endeavors at proselytism. The teacher being amply possessed of a knowledge of the whole chain of events, and of all biographical incidents; and bringing to the exercise a heart glowing with love to man, and with devotion to his duty as a former of the character of children, has no necessity or occasion to fall back upon the formulas of a creed. It is when a teacher has no knowledge of the wonderful works of God, and of the benevolence of the design in which they were created; when he has no power of explaining and applying the beautiful incidents in the lives of prophets and apostles, and especially, the perfect example which is given to men in the life of Jesus Christ; it is then, that, in attempting to give religious instruction, he is, as it were, constrained to recur again and again to the few words or sentences of his form of faith, whatever that faith may be; and, therefore, when giving the second lesson, it will be little more than a repetition of the first, and the two-hundredth lesson, at the end of the year, will differ from that at the beginning only in accumulated wearisomeness and monotony.

There are one or two facts, however, which Professor Stowe has omitted to mention, and without a knowledge of which, one would form very erroneous ideas respecting the character of some of the religious instruction in the Prussian schools. In all the Protestant schools, Luther's Catechism is regularly taught; and in all the Roman Catholic schools, the Catechism of that communion. When the schools are mixed, they have combined literary with seperate religious instruction; and here all the doctrines of the respective denominations are taught early and most assiduously. I well remember hearing a Roman Catholic priest inculcating upon a class of very young children the doctrine of transubstantiation. He illustrated it with the miracle of the water changed to wine, at the marriage feast in Cana; and said that he who could turn water into wine, could turn his own blood into the same element, and also his body into bread to be eaten with it. Contrary, then, to the principles of our own law, sectarianism is taught in all Prussian schools; but it is nevertheless true, as Professor Stowe says, that the Bible can be taught, and is taught, without it.

MUSIC.

All Prussian teachers are masters not only of vocal, but of instrumental music, One is as certain to see a violin as a blackboard, in every school-room. Generally speaking, the teachers whom I saw, played upon the organ also, and some of them upon the piano and other instruments. Music was not only taught in school as an accomplishment, but used as a recreation. It is a moral means of great efficacy. Its practice promotes health; it disarms anger, softens rough and turbulent natures, socializes, and brings the whole mind, as it were, into a state of fusion, from which condition the teacher can mould it into what forms he will, as it cools and hardens.

All these subjects I have enumerated, were taught in all the schools I visited, whether in city or country, for the rich or for the poor. In the lowest school in the smallest and obscurest village, or for the poorest class in over-crowded cities; in the schools connected with pauper establishments, with houses of correction or with prisons, in all these, there was a teacher *of mature age*, of simple unaffected and decorous manners, benevolent in his expression, kind and genial in his intercourse with the young, and of such attainments and resources as qualified him not only to lay down the abstract principles of the above range of studies, but, by familiar illustration and apposite example, to commend them to the attention of the children.

Although the foregoing account of primary instruction in Germany, was drawn from observations mainly in the schools of Prussia and Saxony, it is, in its main features, applicable to primary schools in the other German States. On this point, Mr. Kay bears the following emphatic testimony in his valuable contribution to our knowledge of the social and educational condition of Europe*—a work, from which we shall have occasion to quote largely in giving an account of the school systems of Switzerland and the several German States.

In Bavaria, Wirtemburg, the Duchy of Baden, and Nassau, as much, and in Wirtemberg and Baden perhaps even more, has been done to promote the intelligence, morality, and civilization of the lower orders of society, than in Prussia. In each of these countries, every village has a good school-house, and *at least* one learned and practically efficient teacher, who has been educated for several years at a college; every town has several well-organized schools, sufficiently large to receive all the children of the town, who are between the ages of six and fourteen; each of these schools contains from four to ten class-rooms, and each class-room is under the direction of a highly educated teacher.

In each of these countries, every parent is *obliged* to educate his children, either at home or at some school, the choice of means being left to himself. In none of these countries are children left to grow up in vicious ignorance or with debasing habits.

In none of these countries, is there any class of children analogous to that, which swarms in the back streets, alleys, and gutters of our great cities and towns, and from which our paupers, our disaffected, and our criminals grow up, and from which our "ragged schools" are filled. All the children are intelligent, polite, clean, and neatly dressed, and grow up from their sixth to their fourteenth year under the teaching and influence of educated men.

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* *The Social Condition and Education of the People in England and Europe;* showing the results of the primary schools and of the division of landed property in foreign countries, by Joseph Kay, Esq., M. A., of Trinity College, Cambridge; Barrister-at-law; and late Travelling Bachelor of the University of Cambridge. London: Longman, Brown, Green, and Longmans. 1850.

In each of these countries a sufficient number of normal colleges has been founded, to enable it to educate a sufficient supply of teachers for the parishes and towns.

In each of these countries, all the schools of every sect and party, private as well as public, are open to public inspection, and are visited several times every year by learned men, whose business it is to examine both teachers and scholars, and to give the government, the chambers, and the country, a full and detailed account of the state, condition, character, and progress of every school, so that parents may know where to send their children with safety; that good teachers may be encouraged, rewarded, and promoted; and that unworthy teachers may not be suffered to continue long in their situations.

In each of these countries, the laws prohibit any person being a teacher of any school, until he has proved his efficiency to the committee of professors, appointed by the state to examine candidates, and until he has laid before such committee testimonials of character from his religious minister, his neighbors, and the professors of the college at which he was educated.

I can give a traveler, who is desirous of comprehending at one short view the workings of the German and Swiss systems of popular education, no better advice than to direct him to notice the state of the streets in any German or Swiss town, which he happens to visit; no matter where it be, whether on the plains of Prussia or Bavaria, on the banks of the Rhine, in the small towns of the Black Forrest, or in the mountainous cantons of Alpine Switzerland, no matter where, let him only walk through the streets of such a town in the morning or the afternoon, and count the number of children to be found there above the age of four or five, or let him stand in the same streets, when the children are going to or returning from the schools, and let him examine their cleanly appearance, the good quality, the excellent condition, and the cleanliness of their clothing, the condition of the lesson books they are carrying, the happiness and cheerfulness, and, at the same time, the politeness and ease of their manners; he will think he sees the children of the rich; but let him follow them home, and he will find that many of them are the offspring of the poorest artizans and laborers of the town. If that one spectacle does not convince him of the magnitude of the educational efforts of Germany, and of the happy results which they are producing, let him go no further, for nothing he can further see will teach him. Let him then come home, and rejoice in the condition of our poor; but, should he start at this extraordinary spectacle, as I have seen English travelers do, to whom I have pointed out this sign of advanced and advancing civilization, let him reflect, that this has been effected, spite of all the obstacles which impede ourselves. Bigotry and ignorance have cried their loudest; Romanists have refused co-operation with Protestants, Protestants with Romanists, and yet they have co-operated. There has been the same strong jealousy of all government interference, the same undefined and ill-digested love of liberty, and there has been the same selfish fear of retarding the development of physical resources. In Bavaria, the war has been waged between Romanists and Protestants; in Argovie, opposition has been raised by the manufacturers; in Lucerne, by the religious parties, and by the political opponents of the government; and in Baden, the difficulties have been aggravated by the numbers of Jews, whom both Romanists and Protestants hated to receive into alliance, even more than they disliked to co-operate among themselves. But in all these countries the great principle has finally triumphed; and all parties have yielded some little of their claims, in the full conviction, that a day is dawning upon Europe, fraught with the most overwhelming evils for that country which has not prepared for its approach.

Whether the methods by which any of these different countries are carrying out their great design, are in any way applicable to this country or not, I shall not stop to consider, my desire being merely to show how different countries, with different degrees of political freedom, with different political constitutions, whose people profess different religious tenets, where Protestants of different sects, Roman Catholics, and Jews, are mingled up in every kind of proportion, have all managed to overcome difficulties precisely similar to those which stand in our way, and have all agreed to labor together to educate their poor. For it is a great fact, however much we may be inclined to doubt it, that throughout Prussia, Saxony, Bavaria, Bohemia, Wirtemburg, Baden, Hesse Darmstadt, Hesse Cassel, Gotha, Nassau, Hanover, Denmark, Switzerland, Norway, and the Austrian Empire, ALL the children are actually, at this present time, attending school, and are receiving a careful, religious, moral, and intellectual education, from highly educated and efficient teachers. Over the vast tract of country, which I have mentioned, as well as in Holland and the greater part of France, *all* the children above six years of age are daily acquiring useful knowledge and good habits under the *influence* of moral, religious, and learned teachers. ALL the youth of the greater part of these countries, below the age of twenty-one years, can read, write, and cipher, and know the Bible history, and the history of their own country. No children are left idle and dirty in the streets of the towns; there is no class of children to be compared, in any respect, to the children who frequent our "ragged schools;" all the children, even of the poorest parents, are, in a great part of these countries, in dress, appearance, cleanliness, and manners, as polished and civilized as the children of our middle classes; the children of the poor in Germany are so civilized that the rich often send their children to the schools intended for the poor; and, lastly, in a great part of Germany and Switzerland, the children of the poor are receiving a *better* education than that given in England to the children of the greater part of our middle classes! These facts deserve to be well considered.

And let it be remembered that these great results have been attained, notwithstanding obstacles *at least* as great as those which make it so difficult for us to act. Are they religious differences which hinder us? Look at Austria, Bavaria, and the Prussian Rhine provinces, and the Swiss cantons of Lucerne and Soleure. Will any one say, that the religious difficulties in those countries are less than those which exist in our own? Is the sectarianism of the Jesuits of Lucerne, or of the priests of Bavaria, of a more yielding character toward the Protestant "heretics," than that of one Protestant party in England toward another? And yet, in each of these countries, the difficulties arising from religious differences have been overcome, and *all* their children are brought under the influence of a *religious* education, without any religious party having been offended. But are they political causes, which prevent us proceeding in this great work, in which nearly all Europe has so long preceded us, notwithstanding that we need it more than all the European nations put together? Are they political causes, I ask? I answer by again referring my readers to the countries I have enumerated. Under the democratic governments of the Swiss cantons, where it is the people who rule and legislate; under the constitutional governments of Saxony, Wirtemburg, and Baden, which were framed more or less upon the English model, and where the people have long had a direct influence upon the government; under the constitutional governments of France and Holland, and under all the different grades of absolute rule which existed but a few months since in Prussia, the German dukedoms, and the Austrian states, the difficulties of the question have long been overcome, and with such entire satisfaction to all parties, that among the present representatives of the people, no member has ever been heard to express a desire for the change of the laws which relate to primary education.

But once again; perhaps there are some who say, but there is no country which is troubled, as we are, by the union of both religious and political difficulties. I again refer my readers to the cases of Holland and Switzerland. They will find in these countries the same strong love of independence of action, which we boast so proudly and so justly. They will find also, not only strong religious feuds existing among the Protestants themselves, and pushed to the most shameful extremities, as in the case of the canton of Vaud, from which one religious party has lately been driven as exiles, but they will find the still more formidable differences of the Protestants and Catholics arrayed against each other, and seemingly preventing all union on any subject whatsoever; and yet, in all these various countries, differing as they do in the state of their religious parties, and of their political regulations, in *all* of them, I say, have *all* parties consented to join on this one great and important question, THE EDUCATION OF THE PEOPLE.

But there are some who say, that if our means of direct education are worse, yet that our means of indirect education are better than those of other countries, and that if our people have not schools and good teachers, they have long had a free press, the right of assembling together for political discussion, plenty of cheap and very liberal journals, good reports of all the debates of our Houses of Legislature, and a literature free in its spirit, suggestive in its writings, and any thing but one-sided in its views of political and social questions, and that all this serves to stimulate the intellectual energies of the people. As far as regards the middle classes, this is all very true; but, as regards the poor, it is ridiculously false. Most of our poor are either wholly without education, or else possess so little as to be entirely out of the sphere of such influences, as those I have enumerated. What good can one of our boorish peasants gain from cheap literature, free parliamentary debates, free discussion, and liberal journals? What advantage is it to a starving man that there is bread in the baker's shop, if he has not wherewith to buy? What good is cheap literature and free discussion to a poor peasant who can neither read nor think? He starves in the midst of plenty, and starves too with a curse upon his lips.

It is utterly false to argue that the peasants would provide themselves with schools and education, if education would improve their condition in society. We can never hope to see the peasants supply themselves with schools. They never have done so in any country, they never will do so in our own. Such a step implies in them a great prior development of the intellectual and moral faculties; a development which can only be obtained by means of education. The peasants are neither wise enough, nor rich enough, to erect or support schools for themselves, and should government refuse either to do it for them, or to oblige all classes to assist the poor to accomplish this great work, we may rest assured that another century will see no further advances than we have made at present; our schools are for the most part totally unfitted for their purpose, and our teachers the most ignorant, ill-paid, and least respected set of men in the community. Other countries have long since recognized these truths, and acted upon them.

Whilst in England we have been devoting most of our energies to the increase of our national wealth, the Germans and Swiss have been engaged in the noble undertaking of attempting to raise the character and social position of their poorer classes. To effect this, they have not vainly imagined that schools alone were sufficient, but to the accomplishment of this great end, every social institution and every social regulation has been rendered subservient. They began, it is true, by raising schools, and educating teachers; but they have continued this great work by reforming their prisons and criminal codes; by facilitating the transfer and division of their lands; by simplifying their legal processes; by reforming their ecclesiastical establishments; by entirely changing the mediæval and illiberal constitutions of their universities and public schools; by improving the facilities of internal communication; and, lastly, by opening the highest and most honorable offices of the state to all worthy aspirants, no matter of how low an origin.

Nor have their labors in the cause of social reform diminished, as there was seemingly less immediate need for them. On the contrary, to a traveler in these countries, who has not acquainted himself with all that has been going on there for the last thirty years, they would seem to be only now commencing, so vigorous and universal are the efforts which are *at this moment* being made.

It is doubtless true, that the social polity of a country should be so ordered, that the whole life of any of its members should be a progressive and continued religious, moral, and intellectual education; but it is no less certain that this great work, if it is ever to have a commencement, must begin at home, and be continued, in the case of the peasant, in the village school, under the superintendence of the religious minister and village teacher, or it can never be accomplished at all. True it is, that at first the evil influence of the home will be stronger than the good one of the teacher and the school. But still, if he understand the conduct of his important work, he will know how to awaken those principles which, it may be, lie dormant, but which nevertheless exist in every child's mind, and which, if once aroused, would be certain in some degree to mitigate the evil influences of home. Thus might we hope, that the cottage firesides of the next generation would prove less injurious than those of the present to the children, who will cluster around them, and that the school would have an auxiliary, and not an antagonist, in the powerful, though now, alas! too often misdirected influences of home. It is only when we have attained this happy result, that we can hope to realize the full benefits which education is capable of conferring, and which, in other lands, it is at this day conferring upon the people.

So long as the early *domestic* training is in direct opposition to the education of the schools, so long must the improvement in education be very slow; but, however slow, it is the only sure means we have of counteracting the effects of a vicious domestic training, and of cleansing the very fount of immorality. The laborer is occupied from twilight on to twilight, and the religious ministers have but few opportunities of bringing higher influences to bear upon him. Those, too, who most need improvement, are generally the most unwilling to receive it; and those whose homes act most injuriously on the younger inmates, are precisely those, who oppose most strenuously the entry of the religious minister, and who are most rarely brought under any ennobling influence whatever. Thus it often happens, that the only way by which we can introduce reform into a home, is through the children; for, most happily, there is among the poor such a great idea of the benefits to be derived from education, that it very rarely happens that the parent can not be persuaded to send his child to school, *when he is enabled to do so.*

It is delightful to see how thoroughly this truth has been recognized in Western Europe. From the shores of the Baltic and the North Sea to the foot of the great Alpine range, and from the Rhine to the Danube, *all* the children of both rich and poor are receiving *daily* instruction, under the surveillance of their religious ministers, from long and most carefully educated teachers. Throughout the plains of Prussia, Bohemia, and Bavaria, among the hills and woods of Saxony and central Germany, in the forests and rich undulating lands of Wirtemburg and Baden, in the deep and secluded Alpine valleys of Switzerland and the Tyrol, in most of the provinces of the Austrian empire, throughout Holland, Denmark, and almost the whole of France, and éven in the plains of Italian Lombardy, there is scarcely a single parish, which does not possess its school-house and its one or two teachers. The school buildings are often built in really an extravagant manner; and in Switzerland and South Germany, the village school is generally the finest erection of the neighborhood. In the towns the expenditure on these monuments of a nation's progress is still more remarkable. Here the municipal authorities generally prefer to unite several schools for the sake of forming one complete one. This is generally erected on the following plan: A large house is built of three or four stories in height, with commodious play yards behind. The one or two upper stories are used as apartments for the teachers; the lower rooms are set apart for the different classes. A town school has generally from *eight* to *ten*, and sometimes twelve or fourteen, of these class-rooms, each of which is capable of containing from 80 to 100 children. An educated teacher is appointed to manage each class, so that there is generally a staff of at least *eight* teachers connected with each town school of Germany, and I have seen schools with as many as twelve and fourteen teachers. The rooms are filled with desks, maps, and all the apparatus which the teachers can require for the purposes of instruction. I generally noticed, on entering a small German or Swiss town, that next to the church, the finest building was the one set apart for the education of the children.

It is impossible to estimate the enormous outlay which Germany has devoted to the erection and improvement of school-houses alone, during the last fifteen years. In the towns, hardly any of the old and inefficient buildings now remain, except where they have been improved and enlarged. In Munich, I directed my conductor to lead me to the worst school buildings in the city, and I found all the class-rooms measuring fourteen feet high by about twenty-five square, and ten of such class-rooms in each school-house, each of which rooms was under the constant direction of an educated teacher. In whatever town I happened to be staying, I always sought out the worst, in preference to the best schools. In Berlin, the worst I could find contained four class-rooms, each eight feet in height, and about fifteen feet square; and in the Grand Duchy of Baden I found that the Chambers had passed a law prohibiting any school-house being built, the rooms of which were not fourteen feet high.

Throughout Germany no expense seems to have been spared to improve the materials of popular instruction.

This could never have been effected had not the expenses of such an immense undertaking been equally distributed over all the parishes of the different states. The burden being thus divided amongst all, is not felt by any; but had the government started in the vain hope of being able to bear even a third of the expense, popular education would have been no further advanced in Germany than in England. But wiser, or more interested in the real success of the undertaking than ourselves, the governments of the different states have obliged each province to provide for the expenses necessary for its own primary education.

The systems, so far from having been systems of excessive centralization, leaving no freedom of action to the parishes, have been always and still are *essentially* parochial systems, merely under the surveillance, and subject to the check of the central authority. It is the parishes and towns, which tax themselves for educational purposes; it is the parishioners and citizens, who elect their own teachers; it is the parishioners and citizens, who pay their own teachers, and provide all the materials for the education of their own poor; it is the parishioners and citizens, who determine whether they will have separate schools for their different religious sects, or common schools for them all; it is the parishioners, who choose the sites of their school-houses, and the outlay they will make on their erection; and although they have not the power of dismissing a teacher after they have once elected him, without first showing to government a sufficient ground for such a step, yet they are afforded every facility of forwarding any complaints they may have to make of any teacher they have elected, to the educational authorities appointed to judge such matters, and to protect the teachers from the effects of mere personal animosities or ignorance.

Germany will one day be lauded by all Europe, as the inventor of a system securing, in the best possible manner, guidance by the greatest intelligence of the country, the cheapest manner of working, the fostering of local activity and of local sympathies, and the cordial assistance of the religious ministers.

Disputes about separate or mixed schools are unheard of in Prussia, because every parish is left to please itself which kind it will adopt. One of the leading Roman Catholic Counsellors of the Educational Bureau in Berlin assured me, that they never experienced any difficulty on this point. "We always," he said, "encourage separate schools when possible, as we think religious instruction can be promoted better in separate than in mixed schools; but, of course, we all think it better to have mixed schools, than to have no schools at all; and when we can not have separate schools we are rejoiced to see the religious sects uniting in the support of a mixed one. When mixed schools are decided on by the parochial committees, the teacher is elected by the most numerous of the two sects; or, if two teachers are required, one is elected by one sect, and the other by the other; and in this case each conducts the religious education of the children of his own sect. But when only one teacher is elected, the children of those parents, who differ from him in religious belief, are permitted to be taken from the school during the religious lessons, on condition that their parents make arrangements for their religious instruction by their own ministers."

I went to Prussia with the firm expectation, that I should hear nothing but complaints from the peasants, and that I should find the school nothing but a worthy offshoot of an absolute government. To test whether this really was the case or not, as well as to see something of the actual working of the system in the country districts, I traveled alone through different parts of the Rhine provinces for four weeks before proceeding to the capital. During the whole of my solitary rambles, I put myself as much as possible into communication with the peasants and with the teachers, for the purpose of testing the actual state of feeling on this question. Judge, then, of my surprise, when I assure my readers that, although I conversed with many of the very poorest of the people, and with both Romanists and Protestants, and although I always *endeavored* to elicit expressions of discontent, I never once heard, in any part of Prussia, one word spoken by any of the peasants against the educational regulations. But on the contrary, I every where received daily and hourly proofs, of the most unequivocal character, of the satisfaction and real pride with which a Prussian, however poor he may be, looks upon the schools of his locality.

Often and often have I been answered by the poor laborers, when asking them whether they did not dislike being *obliged* to educate their children, "Why should

I? The schools are excellent; the teachers are very learned and good men; and then think how much good our children are gaining; they behave better at home, they make our families all the happier, and they are much better able in after-life to earn their own livelihood. No, no; we do not dislike the schools. We know too well how much good our children are gaining from them." I have heard this said over and over again in different parts of Prussia, Saxony, Bavaria, Wirtemburg, and Baden; and, indeed, I may add, that throughout Germany, I never heard one single word of discontent uttered against these truly liberal and Christian establishments.

Every one of the richer classes, with whom I conversed, corroborated the truth of all that the peasants had told me. I particularly remember a very intelligent teacher at Elberfeld saying to me, "I am quite convinced that, if we had a political revolution to-morrow, none of the peasants would think of wishing to have any great alteration made in the laws which relate to the schools." Recent facts have proved the truth of the assertion.*

Several travelers have fallen into the strangest errors in their investigations on this subject, from having confined their attention to the schools of the capitals, or of one or two other large towns. Very few have seen the working of the system in the villages and remote provinces. But it is there only that a fair idea can be formed of the effects it is producing, and of the manner in which it is regarded by the people themselves.

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* A remarkable proof of the truth of these remarks is, that since the commencement of the German revolutions of 1848, the only change in the educational regulations, which has been demanded by the people, is, that they should be allowed to send their children to the parochial schools free of all expense, and that the present small weekly pence required from the parents for the education of each child should be paid out of the regular parochial school rates. This has been conceded, and the peasants themselves will now as rigorously enforce the compulsory educational regulations, as the Swiss peasants enforce laws *at least* as stringent.

IV. PUBLIC INSTRUCTION IN PRUSSIA.

HISTORY AND STATISTICS.

The system of Public Instruction in Prussia embraces three degrees, provided for in three classes of institutions. 1. Primary or Elementary Instruction, conveyed in schools corresponding to our common schools. 2. Secondary Instruction, provided for in Gymnasia, Real Schools and Trade Schools. 3. Superior instruction, communicated in the Universities. We shall confine our attention to Primary Instruction, and shall present a general idea of the system from various authorities.*

As early as the reign of the Elector Joachim the Second, before the kingdom of Prussia existed, except as the Mark of Brandenburg, (1540,) visitors were appointed to inspect the town schools of the Electorate, with express directions to report in relation to the measures deemed necessary for their improvement. In 1545, the same elector appointed a permanent council or board, on church and school matters. In a decree of some length, by the elector John George, (1573,) special sections are devoted to the schools, to teachers and their assistants, and to pupils. It is remarkable as containing a provision for committees of superintendence, consisting of the parish clergyman, the magistrates and two notables, exactly similar in constitution to the present school committees.

In 1777, a decree of Frederick William the First, king of Prussia, enjoins upon parents to send their children to school, provides for the payment of teachers, for the education of poor children, and for catechetical instruction by the parochial clergymen. In 1735, the first regular seminary for teachers in Prussia was established at Stettin, in Pomerania. To induce a better attendance at school, a decree of 1736 requires that the parent of every child between five and twelve years of age, shall pay a certain fee, whether his child goes to school or not; this rule being, as it were, preliminary to the present one of forced attendance. The same decree refers to school-houses erected by associated parishes, showing, that such associations existed previously to the decree for providing public schools; similar associations may even now exist, but they are not numerous, forming exceptions to the general rule requiring each parish to have its public school. The decree provides further for the amount of fees to be paid to the teacher by the pupils, the church, or the state, and for aid to peasants who have more than two children above five years of age, by the payment of the fees of all over this number from a school fund. A rescript of 1738, constitutes the clergy the inspectors of schools.

Bache's "*Report on Education in Europe.*" Cousin's "*Report on Primary Instruction in some of the States of Germany, and particularly in Prussia.*" Prof. Stephens's "*Letter to the Superintendent of Common Schools in Pennsylvania in* 1843." Recent School Documents from Germany, by Harnisch, Calinich, Jacobi and others.

An attempt to provide more precisely, by law, for the regulation of the schools in Berlin, was made by a decree of 1738. This decree requires that teachers shall be regularly examined by the inspectors of schools before being allowed to teach, and prescribes their acquirements in detail. It directs the opening and closing of the schools with prayers; fixes the hours of daily attendance at from eight to eleven, or seven to ten in the morning, and one to three in the afternoon; prescribes instruction in spelling, reading, writing, arithmetic, and singing, and regulates the emoluments and perquisites of the master.

A new impulse was given to public instruction under the reign of Frederick the Great. The regulations drawn up by Hecker, and approved by the king, (1763,) are very precise, and though they have been in part superseded by later decrees, many of their provisions are still in force. They provide for the selection of school books by the consistory; that children shall be sent to school at five years of age, and be kept there until thirteen or fourteen, or until they have made satisfactory attainments in reading and writing, in the knowledge of Christian doctrine, and of such matters as are to be found in their text-books; fix the school-hours, requiring six hours a day for instruction in winter, and three in summer, and one hour of catechetical instruction, besides the Sunday teaching; require that all unmarried persons of the parish shall attend the hour of instruction in the catechism, and besides, receive lessons in reading and writing from the Bible. The regulations provide anew for the schoolmasters' fees, and for the instruction of poor children; require that the schoolmaster shall be furnished from the church-register with a list of all the children of the age to attend school, and that he shall prepare a list of those who are actually in attendance, and submit both to the clergyman, in his periodical visits; direct anew the examination of candidates for the situation of schoolmaster, and refer particularly to the advantages of the seminary opened at Berlin for preparing teachers for the Mark of Brandenburg; lay down minutely the scheme of elementary instruction, and actually specify the time to be devoted to the different branches, with each of the two classes composing the school; require the parochial clergy to visit the schools twice a week, and inspectors of circles to perform the same service at least once a year.

The decree of Frederick regulating the Catholic schools of Silesia, (1765,) is even more particular than the foregoing. It shows the settled policy in regard to educating teachers in special seminaries, now so important a part of the Prussian system, by setting apart certain schools by name for this purpose, requiring the appointment of a director to each, and assigning his duties.

In 1787, Frederick William the Second created a council of instruction, under the title of an "Upper School Board," (Ober-Schul Collegium,) of which the minister of state was president. The council was directed to examine text-books, and to pass upon the licenses of masters, on the reports of the provincial school-boards. They were authorized to erect seminaries for teachers at the government expense, and to frame their regulations; to send out an inspector from their body to examine any part of public instruction, and to rectify all wrongs by a direct order, or through the school-boards of the provinces, the school committees or patrons. This organization remained substantially in force until the separation of the departments of state and instruction in 1817, with the creation of a ministry of public instruction. The attributes of this upper school board, it will be seen, now belong to that council.

The school plan of 1763 was modified by an ordinance of 1794, which introduces geography and natural history in the elementary schools, and refers to vocal music as one of their most important exercises; it also attempts, by minute prescriptions, to introduce uniformity in the methods of instruction and discipline. The regulation for the catholic schools of Silesia was also revised in 1801.

But the most important era in the history of public instruction in Prussia, as well as in other parts of Germany, opens with the efforts put forth by the king and people, to rescue the kingdom from the yoke of Napoleon in 1809. In that year the army was remodeled and every citizen converted into a soldier; landed property was declared free of feudal service; restrictions on freedom of trade were abolished, and the whole state was reorganized. Great reliance was placed on infusing a German spirit into the people by giving them freer access to improved institutions of education, from the common school to the university. Under the councils of Hardenberg, Humbolt, Stein, Altenstein, these reforms and improvements were projected, carried on, and perfected in less than a single generation.

The movement in behalf of popular schools commenced by inviting C. A. Zeller, of Wirtemberg, to Prussia. Zeller was a young theologian, who had studied under Pestalozzi in Switzerland, and was thoroughly imbued with the method and spirit of his master. On his return he had convened the school teachers of Wirtemberg in barns, for want of better accommodations being allowed him, and inspired them with a zeal for Pestalozzi's methods, and for a better education of the whole people. On removing to Prussia, he first took charge of the seminary at Koenigsberg, soon after founded the seminary at Karalene, and went about into different provinces meeting with teachers, holding conferences, visiting schools, and inspiring school officers with the right spirit.

The next step taken was to send a number of young men, mostly theologians, to Pestalozzi's institution at Ifferten, to acquire his method, and on their return to place them in new, or reorganized teachers' seminaries. To these new agents in school improvement were joined a large body ot zealous teachers, and patriotic and enlightened citizens, who, in ways and methods of their own, labored incessantly to confirm the Prussian state, by forming new organs for its internal life, and new means of protection from foreign foes. They proved themselves truly educators of the people. Although the government thus not only encouraged, but directly aided in the introduction of the methods of Pestalozzi into the public schools of Prussia, still the school board in the different provinces sustained and encouraged those who approved and taught on different systems, such as Dinter, Zerrenner, Salzman, and Niemeyer—all, in fine, who labored with a patriotic purpose, thus allowing intellectual freedom, and appropriating whatever was good from all quarters toward the accomplishment of the great purpose.

To infuse a German spirit into teachers and scholars, particular attention was paid to the German language, as the treasury house of German ideas, and to the geography and history of the father land. Music, which was one of Pestalozzi's great instruments of culture, was made the vehicle of patriotic songs, and through them the heart of all Germany was moved to bitter hatred of the conqueror who had desolated her fields and homes, and humbled the pride of her monarchy. All these efforts for the improvement of elementary education, accompanied by expensive modifications in the establishments of secondary and superior education, were made when the treasury was impoverished, and taxes, the most exorbitant in amount, were levied on every province and commune of the kingdom. Prof. Stephens, now of Girard College, in a letter to the Superintendent of Common Schools of Pennsylvania, written from Berlin, at a time when there was at least a talk of the repudiation of state debts, and especially when a distinguished citizen of that state had proposed to divert the money appropriated for the support of common schools to the payment of interest on the state debts, makes the following remarks on this period of the educational history of Prussia.

"Prussia, who furnishes us with a pattern of excellence in the present state of her public schools, affords us a still more brilliant example in the noble policy by which she sustained them in times of great public distress. Of all the nations of Europe, Prussia was reduced to the greatest extremity by the wars of Napoleon. In 1806, at the battle of Jena, her whole military force was annihilated. Within a week after the main overthrow, every scattered division of the army fell into the hands of the enemy. Napoleon took up his quarters in Berlin, emptied the arsenal, and stripped the capital of all the works of art which he thought worthy to be transported to Paris. By the treaty of Tilsit, in 1807, the king of Prussia was deprived of one-half of his dominions. A French army of 200,000 men were quartered upon the Prussians till the end of the year 1808. Prussia must pay to France the sum of 120,000,000 francs, after her principal sources of income had been appropriated by Napoleon, either to himself or his allies. The system of confiscation went so far that even the revenue from the endowments of schools, of poor houses, and the fund for widows, was diverted into the treasury of France. These last were given back in 1811. Foreign loans were made, to meet the exorbitant claims of the conqueror. An army must be created, bridges rebuilt, ruined fortifications in every quarter repaired, and so great was the public extremity that the Prussian ladies, with noble generosity, sent their ornaments and jewels to supply the royal treasury. Rings, crosses, and other ornaments of cast-iron were given in return to all those who had made this sacrifice. They bore the inscription, "*Ich gab gold um eisen*," (I gave gold for iron.) and such Spartan jewels are much treasured at this day by the possessors and their families. This state of things lasted till after the "War of Liberation," in 1812. But it is the pride of Prussia, that at the time of her greatest humiliation and distress, she never for a moment lost sight of the work she had begun in the improvement of her schools.

In 1809, the minister at the head of the section of instruction, writes as follows, to some teachers who had been sent to the institution of Pestalozzi to learn his method and principles of instructing:—"The section of public instruction begs you to believe, and to assure Mr. Pestalozzi, that the cause is the interest of the government, *and of his majesty, the king, personally*, who are convinced that liberation from extraordinary calamities is fruitless, and only to be effected by a thorough improvement of the people's education." In 1809, was established the teachers' seminary in Koenigsberg. In 1810, the seminary at Braunsburg. In 1811, the seminary at Karalene. In 1812, was established at Breslau, the first seminary, completely organized according to the new ideas. In 1809, the most amply endowed and completely organized of all the German universities was founded in Berlin. Professors were called from all parts, and in 1310 the university was in full operation. In 1811, the old university of Breslau was reorganized, and large grants were received from the government for new buildings and new professorships. Is not this noble policy, on the part of an absolute government, at a time when the nation was struggling for existence, a severe rebuke upon the narrow and short-sighted expedients of those republican politicians, who can invent no better way to pay a public debt than by converting into money that institution on which the virtue and intelligence of the people, and the special safety of a republican state, mainly depend?"

The school system of Prussia, is not the growth of any one period, and is not found in one law, but is made up of an aggregation of laws and general regulations, enacted at different times for different provinces, differing in the condition, habits, and religion of the people, and to meet particular wants, as these have been developed in the progress of the system. An attempt was made in 1819 to prepare a general school law for Prussia, but without success. This is considered by Harnisch and other German educators, a great defect, as it leads to great inequalities of education, and great irregularities of administration in different provinces. The ordinance of 1819, however, embraces much of the regulations which are applicable to the whole kingdom, while the peculiarities and details of the system must be looked for in the provincial ordinances and special regulations.

The authorities which administer public instruction in Prussia are the following:—The chief authority is the minister, who joins to this supervision that of ecclesiastical and medical affairs. He is assisted by a council, consisting of a variable number of members, and divided into three sections corresponding to the three charges of the minister. The section for public instruction has its president and secretary, and meets usually twice a week for the transaction of business. One of this body is generally deputed as extraordinary inspector in cases requiring examination, and reports to the minister. The kingdom of Prussia is divided into ten provinces, each of which has its governor, styled Superior President, (Ober-President,) who is assisted by a council called a Consistory, (Consistorium.) This council has functions in the province similar to those in the ministerial council in the kingdom at large, and has direct control of secondary public instruction, and of the schools for the education of primary teachers. It is subdivided into two sections, of which one has charge of the primary instruction in the province, under the title of the School Board, (Provincial Schul Collegium.) The school board, in addition to exercising the general supervision of education in the province, examines the statutes and regulations of the schools, insures the execution of existing laws and regulations, examines text-books, and gives permission for their introduction, after having obtained the approbation of the ministry. This board communicates with the higher authorities, through their president, to whom the reports from the next lower authority, to be presently spoken of, are addressed, and by whom, when these relate to school matters, they are referred to the board for examination.

The next smaller political division to a province, is called a Regency, (Regierungs-Bezirk,) which is again subdivided into Circles, (Kreisin,) and those into parishes, (Gemeinden.) The chief civil authority in the Regency, is a president, who is assisted by a council called also a regency. This body is divided into three sections, having charge respectively of the internal affairs, of direct taxes, and of church and school matters. The last named committee examines and appoints all the teachers of elementary and burgher schools within the regency, superintends the schools, ascertains that the school-houses and churches are duly kept in order, administers the funds of schools and churches, or superintends the administration, when vested in corporations, and collects the church and school fees. This committee is presided over by a member of the regency called the School Councilor, (Schul-rath.) As councilor, he has a seat and voice in the provincial consistory, where he is required to appear at least once a year, and to report upon their affairs in his regency, of which the provincial consistory has the superintendence. It is also his duty to visit the schools, and to satisfy himself that they are in good condition.

The next school authority is the inspector of a circle, who has charge of several parishes. These inspectors are generally clergymen, while the councilors are laymen. Next below the special superintendents is the immediate authority, namely, the school committee, (Schul-Vorstand.) Each parish (Gemeinde) must, by law, have its school, except in special cases, and each school its committee of superintendence, (Schul-Vorstand,) consisting of the curate, the local magistrate, and from two to four notables; the constitution of the committee varying somewhat with the character of the school, whether endowed, entirely supported by the parish, in part by the province or state, or by subscription. The committee appoints a school inspector, who is usually the clergyman of the parish. In cities, the magistrates form the school committee, or school deputation, as it is there called, the curates still acting as local inspectors.

Thus, there is a regular series of authorities, from the master of the school up to the minister, and every part of primary instruction is entirely within the control of an impulse from the central government, and takes its direction according to the will of the highest authorities. With such a system, under a despotic government, it is obvious that the provisions of any law may be successfully enforced.

The cardinal provisions of the school system of Prussia, are:

First, That all children between the ages of seven and fourteen years shall go regularly to school. This is enforced by the school committee, who are furnished with lists of the children who should attend, and of those actually in the schools under their charge, and who are required to enforce the penalties of the law.

Second, That each parish shall, in general, have an elementary school. When the inhabitants are of different religious persuasions, each denomination has its school, and if not, provision is made for the religious instruction of the children by their own pastors. The erection of the school-house, its furniture, the income of the master, and aid to poor scholars, are all provided for. The requisite sum comes, in part, from parochial funds, and in part from a tax upon householders. When the parish is poor, it is assisted by the circle, by the province, and even by the state. Besides these elementary schools, most of the towns in Prussia have one or more upper primary or burgher schools.

Third, The education of teachers in seminaries, adapted to the grade of instruction to which they intend devoting themselves. Their exemption during their term of study from active military service required of other citizens. A provision for their support during their term of study. A preference given to them over schoolmasters not similarly educated. Their examination previous to receiving a certificate of capacity, which entitles them to become candidates for any vacant post in the province where they have been examined. Their subsequent exemption from active military service, and even from the annual drill of the militia, if they can not, in the opinion of the school inspector, be spared from their duties. Provision for the removal of the incompetent or immoral. A provision for the support of decayed teachers.

Fourth, The authorities which regulate the schools, and render them a branch of the general government, and the teachers in fact, its officers. In a country like Prussia, this connection secures to the teacher the respect due to his station, and thus facilitates the discharge of his important duties.

Under this system of organization and administration, and especially with these arrangements to secure the employment of only properly qualified teachers, the public schools of Prussia have been multiplied to an extent, and have attained within the last quarter of a century a degree of excellence, which has attracted the attention of statesmen, and commanded the admiration of intelligent educators in every part of Christendom. In the provinces, where the improved system has gone into operation with the habits of the people in its favor, it has already reached every human being; and in even the outer provinces, it is, as fast as time sweeps along new generations, replacing the adult population with a race of men and women who have been subjected to a course of school instruction far more thorough and comprehensive than has ever been attempted in any other country. As an evidence of the universality of the system it may be mentioned, that out of 122,897 men of the standing army, in 1846, only two soldiers were found who could not both read and write. But the system aims at much higher results—with nothing short of developing every faculty both of mind and body, of converting creatures of impulse, prejudice, and passion, into thinking and reasoning beings, and of giving them objects of pursuit, and habits of conduct, favorable to their own happiness and that of the community in which they live. The result which may be reasonably anticipated from this system—when the entire adult population have been subjected to its operation, and when the influences of the home and street, of the business and the recreations of society, all unite with those of the school—have not as yet been realized in any section of the kingdom. Every where the lessons of the school-room are weakened, and in a measure destroyed, by degrading national customs, and the inevitable results of a government which represses liberty of thought, speech, occupation, and political action. But the school, if left as good and thorough as it now is, must inevitably change the government, or the government must change the school. And even if the school should be made less thorough than it now is, no governmental interference can turn back the intelligence which has already gone out among the people. It would be easier to return the rain to the clouds, from which it has parted, and which has already mingled with the waters of every rising spring, or reached the roots of every growing plant.

The following Table exhibits the state of the Public Schools of Prussia, according to the latest official returns published by the government.

STATE OF THE PUBLIC SCHOOLS IN PRUSSIA IN 1846.

Name of the District.	Elementary Schools.						Schools of a higher description than Elementary.								Town Schools.				Normal Schools.	
	No. of Schools.	Teachers.			Scholars in Average Attendance.		Boys. — Number of				Girls. — Number of				Number of					
		Male.		Female.																
		Fixed.	Assistants.		Boys.	Girls.	Schools.	Teachers.	Assistants.	Scholars.	Schools.	Teachers.	Mistresses.	Scholars.	Schools.	Teachers.	Assistants.	Scholars.	No. of Schools.	No. of Pupils.
1. Konigsberg..	1,598	1,750	173	38	57,892	56,858	17	42	7	1,402	18	93	10	1,828	5	31	15	1,088	3	126
2. Gumbinnen..	1,083	1,131	41	5	40,198	39,044	18	46	..	2,040	19	36	8	1,965	2	15	2	503	2	136
3. Danzig	639	680	24	85	27,033	25,428	9	18	2	700	4	12	12	574	4	29	5	1,009	1	43
4. Marienwerder	1,044	1,097	15	7	40,210	38,003	5	13	2	395	5	17	6	519	4	16	6	884	1	65
5. Posen	1,194	1,360	81	659	67,982	66,124	7	17	..	674	7	17	8	984	5	27	5	572	3	187
6. Bromberg ...	691	747	23	14	29,325	27,623	6	12	..	357	6	8	8	444	1	1	..	29	2	48
7. Hurl Berlin..	108	237	272	134	14,096	12,720	12	27	61	1,797	45	271	138	5,157	9	68	59	2,950	1	33
8. Potsdam	1,547	1,810	44	66	66,224	65,515	37	124	4	6,809	34	80	37	5,598	1	9	1	382	1	95
9. Frankfurt ...	1,265	1,568	31	19	67,476	66,028	14	36	..	1,963	16	44	14	2,623	6	40	2	1,275	2	149
10. Stettin	1,077	1,221	30	32	41,588	39,575	28	80	8	3,955	33	83	36	4,375	2	20	5	529	3	84
11. Coslin	1,023	1,015	70	9	30,855	29,554	14	59	4	2,835	15	30	9	2,579	1	7	..	184	1	51
12. Stralsund....	379	386	10	36	12,421	11,475	11	23	2	766	9	13	12	460	3	6	..	249	2	24
13. Breslau......	1,495	1,551	343	54	89,585	89,276	22	54	19	3,595	7	19	26	2,937	1	11	12	570	1	107
14. Oppeln	939	1,073	316	4	79,871	79,686	7	17	2	294	4	17	8	345	1	6	2	225	1	113
15. Lugnitz	1,339	1,224	275	5	66,905	68,054	17	46	10	2,025	21	42	47	2,511	3	16	3	571	1	91
16. Magdebarg ..	1,068	1,371	36	51	55,332	55,249	40	87	6	3,847	19	61	55	3,194	4	29	8	801	3	121
17. Merseberg ...	1,258	1,410	52	11	61,807	60,236	18	86	32	6,844	21	93	29	6,811	1	8	13	299	2	108
18. Erfurt	519	627	14	27	29,756	28,758	4	21	2	1,189	6	36	9	1,549	2	18	3	423	3	122
19. Munster	530	417	29	144	32,399	31,727	12	16	14	433	2	2	4	52	1	3	2	45	1	28
20. Minden	572	589	76	53	41,603	39,893	6	12	..	377	7	10	12	632	2	3	..	76	2	93
21. Arnsberg ...	811	876	37	55	50,370	47,165	16	23	1	548	9	19	3	243	6	13	5	462	1	47
22. Coln	581	504	222	93	41,561	37,966	2	3	4	52	7	9	31	623	3	16	4	404	1	101
23. Dusseldorf...	798	904	334	36	71,627	67,693	12	24	2	405	25	53	48	854	12	53	17	1,310	2	177
24. Coblentz. ...	1,058	985	79	63	45,419	43,508	5	11	11	202	11	13	46	527	13	26	10	489	1	87
25. Trier	881	830	71	96	39,684	39,025	2	..	4	51	4	6	5	350	4	11	11	284	..	..
26. Aachen......	533	551	101	60	34,229	31,702	1	1	..	11	6	8	19	568	4	18	7	561	..	..
Total....	24,030	25,914	2,749	1,856	1,235,448	1,197,885	342	898	197	43,516	360	1,094	640	48,302	100	505	197	15,624	41	2,186

In 1848, the population of Prussia was about 16,000,000. According to the foregoing table, there were 24,030 elementary schools, with 2,433,333 children, between the ages of 6 and 14, in average daily attendance; 1,202 middle or burgher schools with 91,888 pupils, and 100 higher or town schools, with 15,624 pupils, making an aggregate of 25,332 public primary schools, and 2,540,775 pupils. To these schools should be added 117 gymnasia for classical education, with 29,474 pupils, and 1,664 professors; 7 universities with 4,000 students and 471 professors, and libraries with over 1,000,000 volumes; 382 institutions, in the nature of infant schools, with 25,000 children, and a large number of schools for special instruction, as for the blind, deaf mutes, commerce, trades, arts, &c.; and Prussia can present an array of institutions, teachers professors, and educational facilities, for all classes of her population, not surpassed by any other country.

If to the number of children at school, public or private, we add those who are receiving instruction at home, or who have left school after obtaining the certificate of school attendance up to the age of twelve years, and of their being able to read, write, and cipher, and those who are detained from school temporarily by sickness, we can easily acquiesce in the claim of the director of the Statistical Bureau, by whom the annual school returns are collected, and published every three years, that every child under fourteen years of age has already attended school public or private, or has acquired that degree of instruction which makes self-education in almost any direction practicable. From an investigation made by the government in 1845, there were, in the whole of Prussia, only two young men in every one hundred between the ages of twenty and twenty-two, who could not read, write, and cipher, and had not a knowledge of Scripture history.

According to the foregoing table, there were 34,030 primary school teachers employed in, viz.:

Elementary schools.	Head teachers,	25,914
" "	Assistants,	2,749
" "	Schoolmistresses,	1,856
Middle or Burgher schools for boys.	Head teachers,	898
" " " "	Assistants,	197
" " " girls.	Head teachers,	1,094
" " " "	Schoolmistresses,	640
Higher Burgher.	Head teachers,	505
" "	Assistants,	197
	Total,	34,030

These thirty-four thousand teachers had all been thoroughly educated in the studies they were called on to teach, and the best methods of teaching the same in seminaries established for this purpose, of which there were forty-six, supported by the government, in 1848. By means of educational periodicals, and frequent meetings for professional improvement, these teachers are bound together into a great association, stimulating each other to higher attainments, and marching forward a noble army for the improvement, and not the destruction of the people.

The following statistics will show how steadily the primary schools have advanced in numbers, attendance, and teachers, since 1819:

1. In 1819, the number of schools in Prussia was	20,085
In 1825, " " " "	21,625
In 1831, " " " "	22,612
In 1843, " " " "	23,646
In 1846, " " " "	25,332
2. In 1819, the number of teachers in Prussia was	21,895
In 1825, " " " "	22,965
In 1831, " " " "	27,749
In 1843, " " " "	29,631
In 1846, " " " "	32,316
3. In 1825, the number of children between seven and fourteen years of age, was	1,923,200
And the number of these who were attending the schools, was	1,664,218
In 1831, the number of children between seven and fourteen years of age, was	2,043,030
And the number of these who were attending the schools, was	2,021,421
In 1843, the number of children between seven and fourteen years of age, was	2,992,124
And the number of these who were attending the schools, was	2,328,146
In 1846, the number of children in public schools,	2,540,775

These great results have been obtained by the united efforts of the government and the people; but even these statistics can not show the improvement which has been made in school-houses, school instruction, and the whole internal economy of the school-room.

V. SUBJECTS AND METHODS OF INSTRUCTION

IN

THE PRIMARY SCHOOLS OF PRUSSIA.

BEFORE presenting an outline of the course of instruction pursued in the common schools of Prussia, gathered from the observations of distinguished educators in their visits to a large number of schools of different grades, as well as from published accounts of the organization and studies of particular schools, we will introduce a brief view[*] of the general objects and different degrees of primary education, and of the manner in which the schools are established and conducted.

Two degrees of primary instruction are distinguished by the law; the *elementary schools* and the *burgher schools.* The elementary schools propose the development of the human faculties, through an instruction in those common branches of knowledge which are indispensable to every person, both of town and country. The burgher schools (*Beurgerschulen Stadtschulen*[†]) carry on the child until he is capable of manifesting his inclination for a classical education, or for this or that particular profession. The gymnasia continue this education until the youth is prepared, either to commence his practical studies in common life, or his higher and special scientific studies in the university.

These different gradations coincide in forming, so to speak, a great establishment of national education, one in system, and of which the parts, though each accomplishing a special end, are all mutually correlative. The primary education of which we speak, though divided into two degrees, has its peculiar unity and general laws; it admits of accommodation, however, to the sex, language, religion, and future destination of the pupils. 1. Separate establishments for girls should be formed, wherever possible, corresponding to the elementary and larger schools for boys. 2. In those provinces of the monarchy (as the Polish) where a foreign language is spoken, besides lessons in the native idiom, the children shall receive complete instruction in German, which is also to be employed as the ordinary language of the school. 3. Difference of religion in Christian schools necessarily determines differences in religious instruction. This instruction shall always be accommodated to the spirit and doctrines of the persuasion to which the school belongs. But, as in every school of a christian state, the dominant spirit (common to all creeds) should be piety, and a profound reverence of the Deity, every Christian school may receive the children of every sect. The masters and superintendents ought to avoid, with scrupulous care, every shadow of religious constraint or annoyance. No schools should be abused to any purposes of proselytism; and the children of a worship different from that of the school, shall not be obliged, contrary to the wish of their parents or their own, to attend its religious instruction and exercises. Special masters of their own persuasion shall have the care of their religious education; and should it be impossible to have as many masters as confessions, the parents should endeavor, with so much the greater solicitude, to discharge this duty themselves, if disinclined to allow their children to attend the religious lessons of the school. The primitive destination of every school, says the law, is so to train youth that, with a knowledge of the relations of man to God, it may foster in them the desire of ruling their life by the spirit and principles of Christianity. The school shall, therefore, betimes second and complete the first domestic training of the child to piety. Prayer and edifying reflections shall commence and terminate the day; and the master must beware that this moral exercise do never degenerate into a matter of routine. Obedience to the laws, loyalty, and patriotism, to be inculcated. No humiliating or indecent castigation allowed; and corporal punishment, in general, to be applied only in cases of necessity. Scholars found wholly incorrigible, in order to obviate bad example, to be at length dismissed. The pupils, as they advance in age, to be employed in the maintenance of good order in the school, and thus betimes habituated to regard themselves as active and useful members of society.

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[*] Mainly in the language of the law and ordinance, as translated and condensed by Sir William Hamilton, in an article in the Edinburgh Review.

[†] Called likewise *Mittelschulen*, middle schools, and *Realschulen*, real schools; the last, because they are less occupied with the study of language (*Verbalia*) than with the knowledge of things, (*Realia.*)

The primary education has for its scope the development of the different faculties, intellectual and moral, mental and bodily. Every *complete elementary school* necessarily embraces the nine following branches: 1. Religion—morality established on the positive truths of Christianity; 2. The German tongue, and in the Polish provinces, the vernacular language; 3. The elements of geometry and general principles of drawing; 4. Calculation and applied arithmetic; 5. The elements of physics, of general history, and of the history of Prussia; 6. Singing; 7. Writing; 8. Gymnastic exercises; 9. The more simple manual labors, and some instruction in the relative country occupations.

Every *burgher school* must teach the ten following branches: 1. Religion and morals. 2. The German language, and the vernacular idiom of the province, reading, composition, exercises of style, exercises of talent, and the study of the national classics In the countries of the German tongue, the modern foreign languages are the objects of an accessory study. 3. Latin to a certain extent. (This, we believe, is not universally enforced.) 4. The elements of mathematics, and in particular a thorough knowledge of practical arithmetic. 5. Physics, and natural history to explain the more important phenomena of nature. 6. Geography, and general history combined; Prussia, its history, laws, and constitution, form the object of a particular study. 7. The principles of design; to be taught with the instruction given in physics, natural history, and geometry. 8. The penmanship should be watched.

and the hand exercised to write with neatness and ease. 9. Singing, in order to develop the voice, to afford a knowledge of the art, and to enable the scholars to assist in the solemnities of the church. 10. Gymnastic exercises accommodated to the age and strength of the scholar. Such is the minimum of education to be afforded by a burgher school. If its means enable it to attempt a higher instruction, so as to prepare the scholar, destined to a learned profession, for an immediate entrance into the gymnasia, the school then takes the name of *Higher Town School.*

Every pupil, on leaving school, should receive from his masters and the committee of superintendence, a certificate of his capacity, and of his moral and religious dispositions. These certificates to be always produced on approaching the communion, and on entering into apprenticeship or service. They are given only at the period of departure; and in the burgher schools, as in the gymnasia, they form the occasion of a great solemnity.

Every half year pupils are admitted; promoted from class to class; and absolved at the conclusion of their studies.

Books of study to be carefully chosen by the committees, with concurrence of the superior authorities, the ecclesiastical being specially consulted in regard to those of a religious nature. For the Catholic schools, the bishops, in concert with the provincial consistories, to select the devotional books; and, in case of any difference of opinion, the Minister of Public Instruction shall decide.

Schoolmasters are to adopt the methods best accommodated to the natural development of the human mind; methods which keep the intellectual powers in constant, general, and spontaneous exercise, and are not limited to the infusion of a mechanical knowledge. The committees are to watch over the methods of the master, and to aid him by their council; never to tolerate a vicious method, and to report to the higher authorities should their admonition be neglected. Parents and guardians have a right to scrutinize the system of education by which their children are taught; and to address their complaints to the higher authorities, who are bound to have them carefully investigated. On the other hand, they are bound to cooperate with their private influence in aid of the public discipline; nor is it permitted them to withdraw a scholar from any branch of education taught in the school as necessary.

As a national establishment, every school should court the greatest publicity. In those for boys, besides the special half yearly examinations, for the promotion from one class to another, there shall annually take place public examinations, in order to exhibit the spirit of the instruction, and the proficiency of the scholars. On this solemnity, the director, or one of the masters, in an official programme, is to render an account of the condition and progress of the school. In fine, from time to time, there shall be published a general report of the state of education in each province. In schools for females, the examinations take place in presence of the parents and masters, without any general invitation.

But if the public instructors are bound to a faithful performance of their duties, they have a right, in return, to the gratitude and respect due to the zealous laborer in the sacred work of education. The school is entitled to claim universal countenance and aid, even from those who do not confide to it their children. All public authorities, each in its sphere, are enjoined to promote the public schools and to lend support to the masters in the exercise of their office, as to any other functionaries of the state. In all the communes of the monarchy, the clergy of all Christians persuasions, whether in the church, in their school visitation, or in their sermons on the opening of the classes, shall omit no opportunity of recalling to the schools their high mission, and to the people their duties to these establishments. The civil authorities, the clergy, and the masters, shall every where cooperate in tightening the bonds of respect and attachment between the people and the school; so that the nation may be more habituated to consider education as a primary condition of civil existence, and daily take a deeper interest in its advancement.

The following extracts from Kay's "*Social Condition and Education of the People*," will show how these provisions of the law, and governmental instructions are carried into practice.

> The three great results, which the Prussian government has labored to ensure by this system of education are—
>
> 1. To interest the different parishes and towns in the progress of the education of the people, by committing the management of the parochial schools to them, under certain very simple restrictions.
>
> 2. To assist the parochial school committees in each county with the advice of the most able inhabitants of the county; and—
>
> 3. To gain the cordial cooperation of the ministers of religion.
>
> These results the government has gained, to the entire and perfect satisfaction of all parties. The provincial and county councils act as advisers of the parochial committees. These latter are the actual directors of parochial education; and the clergy not only occupy places in these parochial committees, but are also the *ex-officio* inspectors of all the schools.
>
> The system is liberally devised; and I am persuaded that it is solely owing to its impartial, popular, and religious character, that it has enlisted so strongly on its side the feelings of the Prussian people.
>
> I know there are many in our land who say, "But why have any system at all? Is it not better to leave the education of the people to the exertions of public charity and private benevolence?" Let the contrast between the state of the education and social condition of the poor in England and Germany be the answer. In England it is well known *that not one half of the country is properly supplied with good schools, and that many of those, which do exist, are under the direction of very inefficient and sometimes of actually immoral teachers.* In Germany and Switzerland, *every* parish is supplied with its school buildings, and *each* school is directed by a teacher of high principles, and superior education and intelligence. Such a splendid social institution has not existed without effecting magnificent results, and the Germans and Swiss may now proudly point to the character and condition of their peasantry.
>
> So great have been the results of this system, that it is now a well known fact, that, except in cases of sickness, every child between the ages of six and ten in the whole of Prussia, is receiving instruction from highly educated teachers, under

the surveillance of the parochial ministers. And, if I except the manufacturing districts, I may go still farther, and say, that every child in Prussia, between the ages of six and fourteen, is receiving daily instruction in its parochial school. But even this assertion does not give any adequate idea of the vastness of the educational machinery, which is at work; for the Prussian government is encouraging all the towns throughout the country to establish infant schools for the children of parents who are forced, from the peculiar nature of their labor, to absent themselves from home during the greater part of the day, and who would be otherwise obliged to leave their infants without proper superintendence; and, as all the children in the manufacturing districts, who are engaged in the weaving-rooms, are also obliged to attend evening classes to the age of fourteen years, I may say, with great truth, that *nearly all the Prussian children between the ages of four and fourteen are under the influence of a religious education.* And let it not be supposed that an arbitrary government has forced this result from an unwilling people. On the contrary, as I have said before, the peasants themselves have always been at least as anxious to obtain this education for their children, as the government has been desirous of granting it.

A proof of the satisfaction, with which the Prussian people regard the educational regulations, is the undeniable fact, that all the materials and machinery for instruction are being so constantly and so rapidly improved over the whole country, and by the people themselves. Wherever I traveled, I was astonished to see the great improvement in all these several matters that was going on. Every where I found new and handsome school-houses springing up, old ones being repaired, a most liberal supply of teachers and of apparatus for the schools provided by the municipal authorities, the greatest cleanliness, lofty and spacious school-rooms, and excellent houses for the teachers; all showing, that the importance of the work is fully appreciated *by the people*, and that there is every desire on their part to aid the government in carrying out this vast undertaking.

The children generally remain in school, until the completion of their fourteenth year; and a law has been issued, for one or two of the provinces, appointing this as the time, after which the parents may remove their children. But if the parents are very poor, and their children have learnt the doctrines of their religion, as well as to read, write, and cipher, their religious minister can, in conjunction with the teacher, permit them to discontinue their attendance at the completion of their twelfth year.

"No child, without the permission both of the civil magistrate of the town or village of which its parents are inhabitants, and also of their religious minister, can be kept from school beyond the completion of its fifth year, or afterward discontinue its attendance on the school classes for any length of time."

If a parent neither provides at home for the education of his children, nor sends them to the school, the teacher is bound to inform the religious minister of the parent: the minister then remonstrates with him; and if he still neglects to send his children, the minister is bound by law to report him to the village committee, which has power to punish him by a fine, of from one halfpenny to sixpence a day, for neglecting the first and greatest duty of every parent. If the village committee can not induce him to educate his children, he is reported to the union magistrates, who are empowered to punish him with imprisonment. But it is hardly ever necessary to resort to such harsh measures, for the parents are even more anxious to send their children to these admirably conducted schools, than the civil magistrate to obtain their attendance. In order, however, to ensure such a regular attendance, and as an assistance to the parents themselves, each teacher is furnished by the local magistrate, every year, with a list of all the children of his district, who have attained the age, at which they ought to attend his classes. This list is called over every morning and every afternoon, and all absentees are marked down, so that the school committees, magistrates, and inspectors may instantly discover if the attendance of any child has been irregular. If a child requires leave of absence for more than a week, the parent must apply to the civil magistrate for it; but the clergyman can grant it, if it be only for six or seven days, and the teacher alone can allow it, if for only one or two days.

At the German revolutions of 1848, one of the great popular cries was for *gratuitous* education. The governments of Germany were obliged to yield to this cry, and to make it the law of nearly the whole of Germany, that all parents should be able to get their children educated at the primary schools without having to pay any thing for this education.

There are now, therefore, no school fees in the greatest part of Germany. Education is perfectly gratuitous. The poorest man can send his child free of all expense to the best of the public schools of his district. And, besides this, the authorities of the parish or town, in which a parent lives, who is too poor to clothe his children decently enough for school attendance, are obliged to clothe them for him, and to provide them with books, pencils, pens, and every thing necessary for school attendance, so that a poor man, instead of being obliged to pay something out of his small earnings for the education of his children, is, on the contrary, actually paid for sending them to school. This latter is an old regulation, and is one which has aided very greatly to make the educational regulations very popular among the poor of Germany.

I made very careful inquiries about the education of children in the principal manufacturing district of Prussia. I remained several days in Elberfeld, their largest manufacturing town, on purpose to visit the factory schools. I put myself there, as elsewhere, in direct communication with the teachers, from whom I obtained a great deal of information; and I also had several interviews on the subject with the educational councillors at Berlin, who put into my hand the latest regulations on this subject issued by the government.

The laws relating to the factory children date only from 1839. They are as follows:—

"No child may be employed in any manufactory, or in any mining or building operations, before it has attained the age of *nine* years.

"No child, which has not received three years' regular instruction in a school, and has not obtained the certificate of a school committee, that it can read its mother tongue fluently, and also write it tolerably well, may be employed in any of the above-mentioned ways, before it has completed its sixteenth year.

"An exception to this latter rule is only allowed in those cases, where the manufacturers provide for the education of the factory children, by erecting and maintaining factory schools."

If a manufacturer will establish a school in connection with his manufactory, and engage a properly educated teacher, he is then allowed to employ any children of nine years of age, whether they have obtained a certificate or not, on condition, however, that these children attend the school four evenings in every week, as well as two hours every Sunday morning, until they have obtained a certificate of proficiency in their studies.

The "schulrath," or educational minister in the county court, decides whether the factory school is so satisfactorily managed, as to entitle the manufacturer to this privilege. This minister also regulates the hours which must be devoted weekly to the instruction of the factory children.

"Young people, under sixteen years of age, may not be employed in manufacturing establishments more than ten hours a day."

The civil magistrates are, however, empowered, in some cases, to allow young people to work eleven hours a day, when an accident has happened, which obliges the manufacturer to make up for lost time, in order to accomplish a certain quantity of work before a given day. But these licenses can not be granted for more, at the most, than four weeks at a time.

After the hours of labor have been regulated by the "schulrath" and the manufacturer, the latter is obliged by law to take care that the factory children have, both in the mornings and in the afternoons, a quarter of an hour's exercise in the open air, and that at noon, they always have a good hour's relaxation from labor.

"*No young person, under sixteen years of age, may, in any case, or in any emergency, work more than eleven hours a day.*" The children of Christian parents, who have not been confirmed, may not work in the mills during the hours set apart by the religious minister, for the religious instruction, which he wishes to give them preparatory to their confirmation.

The manufacturers, who employ children in the mills, are obliged to lay before the magistrate a list, containing the names of all the children they employ, their respective ages, their places of abode, and the names of their parents. If any inspector or teacher reports to the civil magistrate, that any child under the legal age is being employed in the mills instead of being sent to school, or if the police report the infringement of any other of the above-mentioned regulations, the magistrate is empowered and obliged to punish the manufacturer by fines, which are increased in amount on every repetition of the offense.

I examined the actual state of things in Elberfeld, one of the most important of the manufacturing districts of Prussia, and I found these regulations most satisfactorily put in force. No children were allowed to work in the mills, before they had attained the age of nine years, and after this time, they were required to attend classes four evenings every week, conducted by the teachers of the day-schools; or, if their work was of such a nature as to prevent such attendance, then they were obliged to attend classes every Sunday morning for two hours; and this attendance was required to be continued, until the children could obtain a certificate from their teacher and religious minister, that they could read and write well, that they were well versed in Scripture history, and that they knew arithmetic sufficiently well to perform all the ordinary calculations, which would be required of them. As a check upon the parents and manufacturers, no child was allowed to labor in the mills, without having obtained a certificate, signed by its religious minister and its teacher, that it was attending one of these classes regularly. If the attendance was irregular, this certificate was immediately withdrawn, and the child was no longer allowed to continue working in the mills. But, from all I saw of these schools, and from what the teachers told me, I should say, they had no difficulty in enforcing attendance; and, so far from it being evident, that the parents were anxious to send their children into the mills, as soon as possible, I was astonished to find even the *daily* schools filled to overflowing, and that with children, many of whom were thirteen, fourteen, and fifteen years of age.

It is very easy for the traveler, who is merely passing through the *manufacturing* towns of the Rhine Provinces, to prove to himself, how anxious both the people and the government are to carry all these regulations into effect. Let him only take the trouble of wandering into the streets of such a town, at a quarter to eight in the morning, or at a quarter to one in the afternoon, and he will find them alive with children of remarkably courteous and gentle appearance, all *very* neatly and cleanly dressed, each carrying a little bag containing a slate and school books, and all hurrying along to school. Let him visit the same streets at any time during the school hours, and he will find an absence of young children, which, accustomed as he is to the alleys of our towns, swarming with poor little creatures growing up in filth, and coarseness, and immorality, will be even more astonishing and delightful.

Before Prussia began in good earnest to promote the education of the people, it was thought there, as it is in England at the present day, that private charity and voluntary exertions would suffice, to supply the country with all the materials of education. In the early part of the eighteenth century the government enunciated, in formal edicts, that it was the first duty of a parish to educate its young. For nearly one hundred years, it trusted to the voluntary principle, and left the work in the hands of generous individuals; the result was what might have been expected, and what may be observed in England: the supply of the materials of education did not keep pace with the growth of the population. Prussia was little or no better provided with schools in 1815, than it had been in 1715; as to the teachers, they were poor, neglected, ignorant persons. Educated persons would not become teachers of the poor; and the poor were neither able nor willing to pay for the education of teachers for their children. A sufficient number of benevolent individuals could not be found to bear the whole expense of educating the nation; and even in those parishes, in which the benevolent part of the richer classes had managed to collect funds, sufficient for carrying on such a work for a year or two, it was found, that they were unable or unwilling, for any length of time, to bear alone such a great and ever-increasing burden.

After a long trial of this unfair voluntary system, which taxed charitable individuals in order to make up for the default of the selfish or careless, it was found, in 1815, as in England at the present day, that great numbers of parishes had no schools at all; that of the schools which were built, scarcely any were properly supplied with the necessary books and apparatus; that there were no good teachers in the country, and no means of educating any; and that the science of pedagogy had been totally neglected, and was universally misunderstood.

If then, the people were to be educated,—and the French revolution of 1789 had taught the Prussian government the necessity of enlightening the poor and of improving their social condition, it became but too evident, that the government must act as well as preach. In a word, the experience of one hundred years taught the Prussians, that it was necessary to *compel* the ignorant, slothful, and selfish members of the political body to assist the benevolent and patriotic, or that sufficient funds would never be found for educating the whole of the laboring classes. The following regulations, therefore, were put into and are still in force throughout Prussia.

The inhabitants of each parish are obliged, either alone, or in company with one or more neighboring parishes, to provide sufficient school-room, a sufficient number of teachers, and all the necessary school apparatus for the instruction of all their children, who are between the ages of six and fourteen. I shall show by what parochial organization this is effected.

I. *Where all the inhabitants of a village are members of the same religious denomination.*

In these cases, whenever more school-room, or a greater number of teachers, or more apparatus, or any repairs of the existing school-buildings is required, the village magistrate, having been informed of these deficiencies by the district school-inspector, immediately summons a committee of the villagers, called the "Schulvorstand."

This Schulvorstand consists—

1. Of the religious minister of the parish. He is the president of the committee or Schulvorstand. In some parts of Prussia, however, there are still some few remnants of the old aristocracy, who possess great estates; and where the village is situated on one of these estates, there the landlord is the president of the school committee. This, however, is so rare an exception, that it is not necessary further to notice it.

2. Of the village magistrate, who is selected by the county magistrates, from the most intelligent men in the parish.

3. Of from two to four of the heads of families in the parish. These members of the committee are elected by the parishioners, and their election is confirmed or annulled by the union magistrates. If the union magistrate annuls the election, because of the unfitness of the persons chosen, the parish can proceed to a second election; but, if they again select men, who are not fit to be entrusted with the duties of the school committee, the election is again annulled, and the union magistrate himself selects two or four of the parishioners, to act as members of the committee. When the village is situate on the estate of a great landed proprietor, he also can annul the choice of the parishioners; but these cases, as I have before said, are very rare, and are confined almost entirely to the eastern provinces of Prussia, where the Polish nobles still retain some of their former possessions; for in the other provinces of Prussia, the land is now almost as much subdivided as in France, and is generally the property of the peasants.

The members of these committees are chosen for six years, at the end of which time a new election takes place.

If several parishes join in supporting *one* school, each of them must be represented in the school committee, by at least one head of a family. The county court, however, has the power of preventing this union of parishes, for the support of one joint school,—

1. When the number of children is so great, as to make it difficult to instruct them all in two classes.

2. When the parishes are separated too far apart, or when the roads between them are bad, dangerous, or at times impassable.

In such cases there must be separate schools; or else the great law of the land, that "*all the children must be educated*," would often be infringed.

II. *Where the inhabitants of a village are members of different religious denominations.*

Sometimes it happens, that a parish contains persons of different religious opinions; and then arises the question, which has been a stumbling-block to the progress of primary education in England, "how shall the rival claims of these parties be satisfied, so that the great law of Germany, that '*all the children must be educated*,' may be carried into effect?"

In these cases, the governments of Germany leave the parishes at perfect liberty to select their own course of proceeding, and to establish separate or mixed schools, according as they judge best for themselves. The only thing the government requires is, that schools of one kind or another shall be established.

If the inhabitants of such a parish in Prussia determine on having separate schools, then separate school committees are elected by the different sects. The committee of each sect consist of, the village magistrate, the minister, and two or three heads of families, of the religious party for which the committee is constituted.

If the inhabitants, however, decide on having one mixed school for all the religious parties, the committee consists of, the village magistrate, the religious ministers of the different parties, and several of the parishioners, elected from among the members of the different sects, for which the school is intended.

In these cases, the teacher is chosen from the most numerous religious party; or, if the school is large enough to require two teachers, the head one is elected from the members of the most numerous party, and the second from those of the next largest party. If there is only one teacher, children of those parents who do not belong to the same religious sect as the teacher, are always allowed to absent themselves during the hour in which the teacher gives the religious lessons, on condition that the children receive religious instruction from their own religious ministers.

One of the educational councillors at Berlin informed me, that the government did not *encourage* the establishment of mixed schools, as they think, that in such cases, the religious education of both parties, or at least of one of them, often suffers; but, he continued, "of course we think a mixed school infinitely better than none at all; and, when a district is too poor to support separate schools, we gladly see mixed ones established." The gentleman who said this was a Roman Catholic. In the towns, there are not often mixed schools containing Romanists and Protestants, as there generally are sufficient numbers of each of these sects in every town, to enable the citizens to establish separate schools. The children of Jews, however, are often to be found, even in the towns, in the schools of the other sects; but, owing to the entire and uncontrolled liberty of decision that the people themselves possess on this point, there seems to be little difficulty in arranging matters, and no jealousy whatever exists between the different parties. If a mixed school is established in any parish, and the teacher is chosen from the most numerous sect, and if the minor party becomes discontented or suspicious of the education given in the school, it is always at liberty to establish another school for itself; and it is this liberty of action, which preserves the parishes, where the mixed schools exist, from all intestine troubles and religious quarrels, which are ever the most ungodly of disputes. In leaving the settlement of this matter to the parishes, the government appears to have acted most wisely; for, in these religious questions, any interference from without is sure to create alarm, suspicion, and jealousy, and cause the different parties to fly asunder, instead of coalescing. All that the government does, is to say, "You must provide sufficient school-room, and a sufficient number of good teachers, but decide yourselves how you will do this." The consequence is, that the people say, "We can try a mixed school first: and, if we see reason to fear its effects, we will then amicably decide on erecting another separate one." So that the great difficulty arising from religious difference has been easily overcome.

The duties of the school committees, when once formed, are:—

1st. To take care that the parish is supplied with sufficient school-room for all the children, who are between the ages of five and fourteen.

2d. To supply the school-room with all the books, writing materials, slates, blackboards, maps, and apparatus necessary for instruction.

3d. To provide the teachers with comfortable houses for themselves and families.

4th. To keep all the school-buildings, and the houses of the teachers, in good repair, often whitewashed, and well warmed.

5th. To take care that the salary of the teachers is paid to them regularly.

6th. To assist those parents who are too poor to provide their children with clothes sufficiently decent for their school attendance.

7th. To assist, protect, and encourage the teachers.

8th. To be present at all the public examinations of the school, at the induction of the teachers, which is a public ceremony performed in church before all the parishioners, and at all the school fête days.

If the school is not endowed, the committee is empowered to impose a tax on the householders for its support, and for the payment of the schoolmaster; and it is held responsible by the higher authorities for his regular payment, according to the agreement, which was made with him on his introduction. The school committee, however, can not discharge the teacher, it can only report him to the higher authorities; for in Prussia none of the *local* authorities, who are in *immediate* contact with the teacher, and who might, consequently, imbibe personal prejudices against him, are allowed to exercise the power of dismissing him. This is reserved for those, who are never brought into personal connection with him, and who are not, therefore, so likely to imbibe such prejudices. Neither can the committee interfere with the interior discipline of the school; it can only inspect the condition of the school, and report to the county authorities. When the committee has once elected the teacher, he is entirely free to follow his own plans of instruction, unfettered by the interference of local authorities, as he is presumed to understand his own business, better than any of those about him. If the school-committee neglects its duties, or refuses to furnish the teacher with the necessary apparatus, or to keep the school-house in proper repair, or to pay the teacher regularly, he has always the power of appealing to the inspectors, or to the county courts, who instantly compel the local authorities to perform their appointed duties.

When a new school is required, the school committee selects the site and plan of the buildings, and sends them for confirmation to the county magistrate. If this magistrate sees any objection to the plans, he returns them to the committee, with his suggestions; the plans are then reconsidered by the committee, and returned with the necessary emendations to the magistrate, who then gives his sanction to them. Before this sanction has been obtained, the plans can not be finally adopted by the committee.

It is already very evident, by what I have said, how very much liberty of action is left to the people themselves. True it is, that in the election of members of the committees, as well as in the choice of plans and sites for school-houses, and in the determination of the amount of the school-rate, the county magistrates have a negative; but this is only a necessary precaution against the possibility of a really vicious selection of members, or of unhealthy or otherwise unsuitable sites for the school-houses, or of a niggardly and insufficient provision for the support of the school. Such a limited interference is always necessary, where the interests of the acting parties might otherwise tempt them to disregard the spirit of the law, and to sacrifice some great public good to the selfishness or ignorance of private individuals.

Every landed proprietor is obliged by law, to provide for the education of the children of all laborers living on his estates, who are too poor themselves to do so. Every such proprietor is also obliged by law, to keep the schools situated upon his estates in perfect repair, and in a perfect state of cleanliness; to conform to all the regulations, of which I shall speak hereafter, and which relate to the election and support of the teachers; and to furnish all the wood necessary for the repairs and warming of the school-buildings, and all the apparatus, books, &c., necessary for instruction.

This is what ought to be done in England. If it is right, that the law should grant to the proprietors such full powers over their property even after death, and should enable them to tie up their land in their own family for so long a time, and thus prevent the land dividing and getting into the hands of the poor, as it does abroad, it is but just, that the landlords should be compelled by law to do, at least, as much for their tenants in this country, as they are compelled to do in countries where the poor are much more favored than they are here, and where the interests of landlords are much less protected by law, than they are with us.

It sometimes happens, that a parish is so poor, as not to be able to build the new school-house, of which it stands in need. In these cases, in order that the great law of the land "*that every child must be educated*" should be carried into execution, it is necessary that the poor parish should receive assistance from without. This is provided for by a law, which requires that each county court shall assist, within its district, every parish, which is not able to provide alone for the expenses of the education of its children. If a county court should, from the number of calls upon its treasury, find itself unable to supply enough to assist all the parishes of the county which need assistance, the government at Berlin grants assistance to the county court; for, whatever else is neglected for want of funds, great care is taken that all necessary means for the education of the people shall be every where provided.

The school organization of the Prussian towns differs somewhat from that of the Prussian villages. I have already mentioned, that the superior *village* magistrates are appointed by the state, and that in each village there is one of these civil magistrates, who is a member of the village school committee, and is held responsible, if sufficient means are not provided for the education of the people of his district. But, in the towns, the magistrates are elected by the citizens; and, strange as it may seem, the municipal corporations have long been, on the whole, liberally constituted. The privilege of citizenship in any town is acquired by good character and honest repute. The magistrates, who have been themselves elected by the citizens, can admit such inhabitants of the town, as they think worthy of the position, to the rank of citizens. But all citizens, who possess any ground of the value, in small towns, of 50*l.*, or in large towns, of about 250*l.* in Prussian money, and all citizens who, without possessing any ground, have incomes of at least 35*l.* per annum, in Prussian money, are by law entitled to a vote in the election of the town magistrates. The citizens, who are entitled to a vote, elect, every three years, a number of representatives, or, as they are called, town councillors. No person can be elected to the office of town councillor, unless he possess land of the value, in small towns, of at least 150*l.*, and in large towns of at least 200*l.*, or whose income does not amount to at least 35*l.* per annum. The number of these councillors depends on the size of the towns; no town can elect fewer than nine, or more than sixty. The manner in which they are elected, differs in different towns, but I believe the ordinary custom is, for each division of a town to elect one or more to represent it in the general council. These councillors, when elected, proceed to the election of a certain number of magistrates, whose offices last from six to twelve years, and these magistrates appoint from among themselves a mayor, who is chosen also for twelve years. The county court, under which the town finds itself ranged, has the power of annulling the election of the mayor, and of any of the magistrates, whom it may judge unfit for their office; and, in such a case, the magistrates or the town councillors, as the case may be, are obliged to proceed to another election. Such is a bare outline of the Prussian municipal system. With the various civic and political duties of the different authorities, I have no concern here, further than they relate to the education of the people.

In each town a committee is chosen, which is called the "*schuldeputation,*" or, as I shall translate it, the school committee. It consists of from one to three, but of never more than three, of the town magistrates, of an equal number of deputies from the town councillors, an equal number of citizens, having the reputation of being interested and skilled in school matters, (these are commonly selected from among the religious ministers,) and also of the several representatives of those privately endowed schools in the town, which are not supported by the town, but yet fall under the surveillance and direction of its municipal authorities. The number of these representatives varies, according to the size of the town. With the exception of the representatives of the *private* schools, the members of this committee are chosen by the magistrates, who are themselves, as I have before said, elected by the citizens; but the representatives of the private schools, which are not supported by the town funds, are nominated by the county courts. To these members, thus elected, is joined one member from each of the committees, which are elected from the magistrates and town councillors for the different municipal affairs, if the former election should not have admitted any such members into the school committee. The first ecclesiastical authority of the town is also, *ex-officio*, a member of the committee; and if the town contains both Romanists and Protestants, the committee must be composed of equal proportions of members of the different parties. The county courts have the power of annulling the election of any member, if they see reason to deem him unfit for the exercise of the duties of his office, and in such a case, the town authorities are obliged to proceed to make a new election.

The duties of the town school committees are to provide sufficient school-room for all the children in the town; to elect a sufficient number of teachers; to pay them their salaries regularly; to provide all needful apparatus for the schools; to keep the class-rooms and the teachers' houses in good repair, well whitewashed, and well warmed; to take care that all the children of the town attend school regularly; to inspect the schools at stated intervals; *to provide each school with a play-ground;* and to take care that the teachers exercise the children there every morning and afternoon. The funds required for the maintenance of the town schools, are provided from the treasury of the corporation.

The town councillors are responsible to the county magistrate and to the central government for the due performance of these several duties. If they neglect any of them, the teachers and inspectors complain to the higher authorities, who oblige them to conform immediately to the general law of the land.

Besides these municipal authorities, for the superintendence of the education of the whole town, it often happens, that each school in the town has its peculiar schulvorstand, corresponding to the village committees, which I have already described. These committees, where they do exist in the towns, elect their own teachers, and collect, in their several districts, the necessary school funds from the heads of families dwelling there; but if any one of the district school committees is not able to provide for the expenditure required to supply the wants of its district, the town school committee is obliged to come forward and assist it, from the general town funds. The latter committee is the general superintendent and assistant, but the former little district societies, where they exist, are the actual laborers. Difference of religion creates no greater difficulty in the towns than in the country parishes, since the Romanists, Protestants, and Jews can, if they prefer, manage their own schools separately, by means of the little school societies, and are never forced into any sort of connection, unless, where it is agreeable to themselves.

The Prussian government seems to have considered the education of the children of the towns, of even higher importance, than that of the children of the villages; and to have required the formation of these superior committees in the towns, as a sort of additional security, that all the districts of a town should be amply provided with every thing necessary for the careful education of their children.

These committees assemble every fortnight, and oftener when necessary, at the town halls; they have the power of inviting any number of the clergy and teachers of the towns to assist at their conferences, and to aid them with their experience and counsels.

In many parts of Prussia these central town committees are superseding the smaller district school societies, so that the funds of all the town schools, and the choice and induction of all the teachers rest entirely with the one central town school committee; and in the case of towns containing different religious sects, as far as I could gather from what I heard in Berlin—for on this point I could find no express regulation—the Protestant members of the town committee appoint the teachers of the Protestant schools, and the Romanist members the teachers of the Romanist schools.

But in every town every religious party is at liberty, if it pleases, to separate itself from the central town committee, and to form its own separate school committee, for the management of its own educational affairs. And where ever the union of the different religious parties occasions any strife and disputes, the small district committees are sure to be formed. Where these smaller committees do exist, they elect the teachers for the schools under their management.

Great advantages are, however, insured, when the management of all the schools in any town can be put under the direction of ONE committee, instead of each being placed under the direction of its separate committee; or when all the Romanist schools can be put under the direction of one committee, and all the Protestant schools under the direction of another. For, in these cases, instead of creating a great number of *small* schools in different parts of the town, each containing only one or two classes, in which children of very different ages and very different degrees of proficiency must be necessarily mingled and taught together, to the manifest retarding of the progress of the more forward as well as of the more backward, several schools are generally combined, so as to form one large one, containing five boys' classes and five girls' classes. In these classes, the teachers are able to classify the children in such a manner, that one teacher may take the youngest and most deficient, another the more advanced, and so on. In this manner, as each teacher has a class of children, who have made about the same progress in their studies, he is enabled to concentrate his whole energies upon the instruction and education of *all* his scholars at the same time, and for the whole time they are in school, instead of being obliged to neglect one part of his class whilst he attends to another, which is necessarily the case, where children of different degrees of proficiency are assembled in one class-room, and which is always necessarily the cause of considerable noise and confusion, tending to distract the attention of both teachers and children.

But, besides the good classification, a further advantage, which results from this combination of schools, is the greater economy of the plan. When each school contains only two class-rooms, four times as many schools are required, as when each school contains eight rooms. And it is by no means true, that a school-building containing eight class-rooms costs as much as four school-buildings, each of which contains two class-rooms. Not only is a great expenditure saved, in the mere erection of the exterior walls and roofs of the buildings themselves, but a still greater saving is effected, in the purchase of land, as, instead of increasing the area on which the school is erected, it is always possible to increase its height.

Nothing can be more liberal, than the manner in which the Prussian towns have provided for their educational wants. The buildings are excellent, and are kept in most admirable order.

The town authorities are held responsible for all this; and, wherever I went, I found large, commodious, and beautifully clean school-rooms, furnished with all that the teachers could possibly require. Along the length of the rooms, parallel desks are ranged, facing the teacher's desk, which is raised on a small platform, so that he may see all his scholars. On either side of him are large blackboards, on which he illustrates the subjects of his lessons. On his right hand, there is generally a cabinet, for the reception of all the books and objects of instruction which belongs to the school; and all around, on the walls of the room, hang maps of different countries, and, generally, several of Germany, delineating, in a strong and clear manner, all the physical features of the different provinces and kingdoms which compose the "Fatherland."

The school-rooms are continually whitewashed; and should there be any neglect on the part of the town or village authorities to keep the school-buildings in proper order, or to provide all the necessary apparatus, the teachers have always the power of complaining to the inspectors, or to the country magistrates, who immediately compel the authorities to attend to these important duties.

Besides the schools, which are managed by school committees in the villages and towns, and which might be denominated public schools, there is another class, which would fall more properly under the designation of private schools.

If a private individual is desirous of establishing a school, as a means of earning his livelihood, or from a desire to offer to the poor of his neighborhood a better education, than they could obtain in the public schools, he is at liberty to do so, on the following conditions:—

1st, That the school be opened to public inspection, on the ground, that as the nation is directly interested in the moral education of its citizens, so it ought to be assured, that none of the children are subjected to immoral and corrupting influences, during the time when their minds are most susceptible of impressions of any kind, and most tenacious of them when received.

2dly, That no person be employed as teacher in such school, who has not obtained a teacher's diploma, certifying his character and attainments to be such, as to fit him for the office of teacher.

3dly, That the school be supplied with a play-ground, and that the children be allowed to take exercise there in the middle of the morning and afternoon school hours.

4thly, That at least a certain fixed amount of instruction in reading, writing, arithmetic, geography, history, singing, and science be given in the school.

5thly, That a sufficient number of teachers be provided for the children ; and,

6thly, That the rooms are kept clean, well warmed, lighted and ventilated.

The profuse expenditure on all the material of education in the Prussian towns astonished me greatly, accustomed as I had been to the dame schools of England, and to the empty and repulsive interiors of many of our national schoolrooms, with their bare floors and uncovered walls.

I took the greatest pains not to be deceived on this point ; and hearing that, owing to some municipal disputes, education had made less progress in Berlin than elsewhere, I requested Professor Hintze of Berlin, to direct me to the worst school in the city, and, having visited several of the more perfect ones, I started one morning to see what was considered a poor school in Prussia.

It was managed by a teacher, who had established a school for the poor at his own expense, as a private speculation, and unconnected with the town committees.

I found a good house containing *four* class-rooms, each of which was fitted up with parallel desks, and was under the direction of a teacher, who had been carefully educated, and had obtained his diploma.

I found a good, dry, and roomy play-ground attached to the school, a very agreeable and seemingly intelligent head master, who was owner of the school, and manager of one of the classes ; and the only cause of complaint I could discover, were, that the rooms were lower than the generality of school-rooms in Prussia, not measuring more than nine feet in height ; that there was a paucity of maps, blackboards, &c. ; that the desks were placed too closely together ; and that the walls were not so white and clean as in the town schools. But I could not help thinking, while walking through the rooms of this building, if these people could only see some of our dame, and some of our dirty and unfurnished national schools, what a palace would they not consider this to be !

The regulations which I have been describing, by means of which the enormous expenses of such a vast educational scheme are divided between all the different districts of the kingdom, and by means of which each parish is held responsible for the education of its children, have been followed by this splendid result—that, notwithstanding that most of their town schools contain five or six times as many class-rooms as those of our country, the Prussian people have established 23,646 schools, which, in 1844, were attended daily by 2,328,146 children, and were directed by 29,639 highly educated teachers, of whom nearly 28,000 were young professors, who had obtained diplomas and certificates of character at the normal colleges ! Now, could this magnificent result have been attained if the people, the clergy, and the government had not been at unity on this great question ? Could it have been attained, if there had been no organization of the parishes and towns, by which the duties of the different educational authorities were clearly and distinctly defined ? Could the government alone have borne the enormous expenses of establishing such a system ? Could the government have even afforded to carry it on ? And, above all, could private charity alone have effected so vast and splendid a result ? These are questions for my readers to answer for themselves.

The central committees of each town are required by law to establish, in addition to the primary institutions, which I have described, one or more *superior primary* schools, the number of which varies according to the population of the town. The education given in them is superior to that given in the primary schools themselves, but is inferior to that given in the *gymnasia* . It is of a more practical character than the latter, and is quite as good as the education of the children of our middle classes. These *superior primary* institutions are intended for all those children, who have passed through the primary schools, and whose parents wish them to receive a better education than that given in the latter establishments, without their having to go through the classical course of the gymnasia.

The education given in these superior schools, as in all the public schools of Prussia, is gratuitous, and open to all classes of society. All the children of the small shopkeepers and artizans, many of the boys, who afterward enter the teachers' colleges, as well as many others, whose parents are to be found in the very humblest walks of life, and even children of the nobles, and of the richest classes of society, are to be found pursuing their studies there together, in the same class-rooms, and on the same benches. I have myself seen sons of counts, physicians, clergymen, merchants, shopkeepers, and poor laborers working together in one of these classes in Berlin.

Above these *superior* schools are the *real* schools and *gymnasia*, or colleges, where a *classical* and *very superior* course of education is pursued, and where the children of the more wealthy classes are instructed. They are under an entirely different direction; and all I have to do with them here, is to mention, that even these institutions are open gratuitously to all, who wish to avail themselves of the education which they offer. Even in these *classical* colleges children of poor laborers are sometimes to be found studying on the same benches on which sit the sons of the rich. It is very instructive to observe, that in Prussia, where one would imagine, according to the doctrines preached in England, that the government should; until the late revolution, have feared to advance the intelligence of the people, no one has seemed to have an idea, that too much instruction could be imparted to the children of the poor. On the contrary, every one has acted as if the public order and public morality depended entirely upon the people being able to think. A theoretically arbitrary government has been doing every thing in its power to stimulate and enable the people to educate their children as highly as possible, and has been for years telling them, that the prosperity and happiness of the country depend greatly on the training of the children; while here, in our free country, we still find people speaking and acting, as if they feared, that education was the inevitable harbinger of immorality and disaffection.

There are also in Prussia a great number of *endowed* schools, which derive their incomes from the rents of lands, or from the interest of money bequeathed to them by charitable individuals, or which have been founded and endowed at different times by the government. For each of these cases, there is an exception made in the operation of the municipal regulations, which I have described: neither of these classes of schools are directed by Schulvorstände, or by the town committees. The teachers for the *former* class are chosen by the trustees, appointed by the will of the devisor; the county courts being enabled to annul the elections, if a bad selection is made. The trustees, however, are unable to appoint any person, as teacher, who has not obtained a diploma* of competency from the provincial committee, appointed to examine all candidates for the teachers' profession. In fact, no person can officiate as teacher, in *any* Prussian school, unless he has obtained such a diploma. This is the parents' guarantee, that he is a person, to whom they may safely intrust their children. The teachers of the class of schools, which have been founded and endowed by government, are appointed by the county courts. The town committees have, however, the surveillance and inspection of all these schools, and are obliged by law to assist them from the town funds, if their own do not suffice for their efficient maintainance. The municipal authorities are also obliged to assist all the parents, who are too poor to do it themselves, to purchase the books, slates, pencils, &c., required for the class instruction; and they are also obliged to provide decent clothing for such children, as are too poor, to obtain a dress sufficiently respectable for school attendance. And here, I can not help remarking, on the general appearance of the children throughout the provinces of Prussia, which I have visited. They were generally very clean, well dressed, polite, and easy in their manners, and very healthy and active in their appearance. In whatever town of Prussia the traveler finds himself, he may always satisfy himself on this point, if he will take the trouble to walk out into the streets, between twelve and two o'clock in the morning, *i. e.*, between the hours of the morning and afternoon classes. In some towns, a stranger would imagine, either that the *poor* had no children, or that they never let them go out of doors. All the children he would see in the streets would appear to him to be those of respectable shopkeepers. This is a very satisfactory proof of the good effects of the school system, as cleanliness and neatness among the poor are invariable symptoms of a satisfactory moral and physical condition.

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* For an account of diplomas, see page 188.

The law requires that every school, both in town and country, shall have an open space of ground adjacent to it, where the children may take a little exercise in the mornings and afternoons. This is a very important regulation, and is well worthy our imitation. The children, in Germany, are never detained more than an hour and a half in the school-room at one time, except when the weather is too bad, to allow of their taking exercise in the open air. Every hour and a half, throughout the day, they are taken into the play-ground for ten minutes' exercise by one of the teachers; the air of the school-room is then changed, and the children return refreshed to their work. In the towns this regulation insures other and greater advantages, as it keeps the children out of the filth and immorality of the streets. In most cases, our town-schools have no yard attached to them, so that, if the children do change the bad and noxious air of the school-room, it is only for the dirt and depravity of the streets, where they are brought under evil influences, much more powerful for injury, than those of the schools are for good.

In some provinces of Prussia, there are still some few of the old class of great landowners, between whom, in former days, the whole of Prussia was divided, until Stein and Hardenburg put the laws in force, which destroyed the old feudal system, and gave the peasants an interest in the soil. It is, therefore, an interesting question to examine, what the law requires these landlords to do for the education of the people on their estates. I have already mentioned, that the selection of the teacher is left to them, but that the government reserves the right of a veto upon their choice, in all cases where an injudicious election is made. The landlords are required to keep in good repair the schools upon their estates, and to pay the school-fees for the children of all the poor laborers living upon them, and not able to pay it themselves. They are also obliged to furnish the materials, required for the erection or repair of all necessary school-buildings; the fuel required for the school-rooms and teachers' houses through the winter; and, where the school is not endowed, the sum which is necessary for the teachers' salaries. The children of the landed proprietors themselves, often attend the village schools, and work at the same desks, with the sons and daughters of the poorest peasants—a proof of the excellent character of the education given in the primary schools, and of the high estimation, in which the teachers are generally held by all classes of society.

About eight or ten years since all the German schools were conducted on the Bell and Lancasterian methods, the children being left almost entirely in the hands of young and half-educated monitors, as in our own parochial schools at the present day. The results of this system were so unsatisfactory that they soon occasioned a powerful reaction in the contrary direction. The German governments, perceiving how grievously the mental education and mental development of the children were retarded by subjecting them to the imperfect care of half-educated monitors, prohibited all employment of monitors in the parochial schools. Hence, it became necessary to considerably increase the staff of teachers, as well as the expenditure required for their support. In the towns this has been productive of beneficial results, as the towns can always raise sufficient funds for the support of a sufficient number of teachers. I generally found that each of these schools throughout Germany had a staff of from six to twelve teachers attached to it, each of whom had attained the age of twenty years, had been specially educated in the classes of the primary, secondary, and normal schools, from his sixth to his twentieth year, and had obtained a diploma certifying his fitness for the profession to which he had devoted himself.

But in the village schools the results of this rejection of all monitorial assistance has been less satisfactory. The villages are not generally rich enough to support more than two teachers, and often not more than one, and this, too, in many cases, where there are 150 children who attend the school. In these cases, therefore, monitors are greatly needed to assist in maintaining order among one part of the children, while the teacher is instructing another part, and to relieve the teacher from the more mechanical part of class instruction, so that he may apply his undivided attention to those branches of instructions, in which his superior skill, knowledge, and experience are most needed.

But the prejudices which the Germans have imbibed against the monotorial system, are, as yet, too strong to allow them to perceive the necessity of employing monitors in the village schools. Whenever I addressed a German teacher on this subject, he immediately answered, "Oh! we have had enough of your Lancasterian methods; depend upon it, we shall never try them again." It was very surprising to me to see, how universal and how strong this antipathy to monitors was throughout Germany; but it served to show me, how deep an interest all classes took in the prosperity of the schools, as it was evident that they only rejected this means of lessening the parochial outlay in the support of teachers, because they believed it to be essentially injurious to the sound mental progress of the children.

No doubt that the old monitorial system was deserving of all their maledictions; but it would well become the Prussian educational authorities to consider, whether the means between the old system and the present, such, viz., as the monotorial system pursued in Holland and France, is not the true state of things to which they ought to aspire. In these countries, the teachers train the most promising of their oldest and most advanced scholars as monitors. They give them instruction in the evenings when the day's work in the school-room is over. These monitors are paid by the parochial authorities just enough, to make it worth their while to remain at their posts as assistants to the schoolmasters until about seventeen years of age, after which time they are removed to the normal colleges to be trained as teachers, whilst other children take their places in the village schools. To these trained and paid monitors nothing is intrusted, but the mere mechanical parts of school teaching, *such as the elements of reading, writing, and arithmetic.* All the higher and more intellectual parts of school education, such as religious instruction, history, geography, and mental arithmetic, are conducted by the schoolmaster himself. But the principal service which the monitors render to the teachers is, in preserving order and silence in the school, and in watching over those classes, which are not for the time being receiving instruction from the schoolmaster. By this means, one able master, with the aid of two intelligent monitors, may conduct a school of 100 children; whenever the number, however, exceeds 100, there should in all cases be, at the least, two superior teachers.

As I have already said, the want of monitors is felt most in the village schools; for the town schools are conducted in a totally different manner. In a town a greater number of children are found assembled together, and greater funds are always found at the disposal of the school authorities, who, it will be remembered, are elected by the people. In each of the Prussian towns, several great school-houses are generally built, each containing from four to sixteen class-rooms. The number does not, I believe, generally exceed eight in one school-house, and some have not more, but hardly any fewer than four. In Germany, except in the poorest villages, different classes are never instructed in the same room. Even in the villages, there are generally two or three class-rooms in the village school-house, for each of which a separate teacher is maintained. This plan of teaching the different classes in different rooms, adds incalculably to the efficiency of the education given. In each room, only one voice is heard at a time—the voice of the teacher or one of the children. The attention of the children is not disturbed or diverted from the teacher by what is going on in another class. Each room is perfectly quiet. The teacher can be heard distinctly, and can hear every noise in his class. Besides all this, for equal numbers of children four or five times as many teachers are employed in Germany as in England. Each child receives, therefore, four or five times as much assistance and attention from a learned man as a child does in England. The individual progress, therefore, of the children in the German schools (and the same may be said of the Swiss schools,) is very much greater than that of the English children. Over each school-house one head teacher is appointed, who is an elderly and experienced man, and who himself takes the management of the highest class. Under him are appointed a number of younger teachers, corresponding to the number of class-rooms in the school-house. These younger masters board with the head teacher in his house, which is generally constructed large enough to afford lodgings for the staff of masters required for all the classes. If the class-rooms do not exceed four, the boys and girls are mixed together in the different rooms, and are divided into four classes, according to their proficiency. If, however, the school contains more than four class-rooms, then the girls and boys are separated into two distinct divisions, each of which is divided into three or four classes according to the proficiency of the children. In the town schools, therefore, it is much easier to dispense with monitors, as no teacher is perplexed with having to direct different classes in the same room. Each teacher has only to instruct a small number of children of about the same proficiency in the same subject, at one time and in a separate room. He can, therefore, at all moments engage all his children in the same occupations, keep them all under his constant inspection, and direct their operations much better than where these operations themselves are necessarily of three or four different kinds at the same time. But even in such case, the teachers require the assistance of monitors, in the writing, drawing, and ciphering exercises; or else, as I have often observed, when the teacher's attention is withdrawn from the class, or when he is attending to some individual pupil in one part of the school, the juvenile spirit is sure to begin to effervesce in another, and to produce noise, disorder, and interruption. This want of assistance for the principal teachers was almost the only fault I could find with the Prussian schools.

The school-buildings were generally excellent, and often handsome; the class-rooms numerous, lofty, capacious, and *always* clean; for the inspectors take great care that the parochial authorities do not neglect the whitewashing and repairs. The scholars themselves were always exquisitely clean. The rooms were constantly whitewashed and scoured. The law obliges the school committees to do this. If any neglect in these particulars is evident, the inspectors and county magistrates are empowered and required to act for the parochial committee, and to raise the funds necessary for the purpose by a parochial rate levied upon the householders. But from the beautiful neatness and cleanliness and from the excellent repair of the school-rooms which I saw in different provinces of Prussia and Germany, it appeared to me, that the people fully understood and appreçiated the importance and utility of these regulations.

The class-rooms were always well fitted up with parallel desks and forms, and almost always with excellent maps of Germany, on which all the leading physical characteristics of the country were delineated in a strong and forcible manner, and on a large scale; and also with smaller but excellent maps of other parts of the world.

At one end of each class-room is the teacher's desk, raised a little above the others. Behind, and on each side of him hang great blackboards, fastened to the wall by moveable hinges. On these he writes copies of the writing exercises, and draws all his figures, &c., for the illustration of his lessons: and on all these also each child is called upon in turn to explain arithmetical operations, or to fill up or draw the outlines of a map of some part of Europe, or of one of the principal countries of the world. The space between the teacher's desk and the other end of the room is filled with parallel rows of desks and forms, at which the children work; for the Prussians are too anxious to make the children interested in their school duties, to think of making education more disagreeable to them than it necessarily is, by forcing them to stand through nearly the whole of their lessons, as they do in many of our national schools to this day. Each school has also a yard, where the children take exercise in the middle of the morning and afternoon school hours, to refresh themselves, and to awaken their faculties, while the windows of the class-rooms are thrown open, and the air of the rooms is thoroughly purified.

Some persons seem to imagine that, if a school-room is built and children attend it, the results must needs be good; but it behooves them to examine whether they have left any influence at work upon the children's minds, stronger than the influence for good which the school affords. If it is so, it seems a little sanguine, to say the least of it, to hope for happy results. The whole system of things in Germany is so entirely different to that in England, that any one who attempts to describe it to Englishmen must necessarily appear to exaggerate. I can only say, let doubters go and inspect for themselves, and I am convinced they will own, that I have not said nearly so much as I might have done, in favor of the wonderful efforts the people and the governments are making to advance the great cause of popular instruction.

Each child buys its own books and slate. Those children, however, who are too poor to pay the small school-fees, and who are consequently sent to school at the expense of the town or parish in which they dwell, are provided with books, &c., by the town or parochial authorities. The children generally carry their books home with them; and every morning at a quarter to eight o'clock, a traveler may see the streets of a German town or village filled with boys and girls, neatly dressed and very clean, hurrying to school; each of the boys carrying his school-books in a small goat-skin knapsack on his back, and each of the girls carrying hers in a small bag, which she holds in her hand. The cleanliness and neatness of dress which I generally observed among the children very much surprised me, and always served to convince me how the educational regulations were tending to civilize and elevate the tastes of the lower classes throughout Germany. At first, I was often disposed to doubt the veracity of my companions, when they assured me that the children I saw were the sons and daughters of poor laborers.

The very way in which children of different ranks of society are to be found mingled in the same school, serves to show how superior the civilization of the lower orders in Germany is to that of the English peasants. With us it would be impossible to associate, in the same school, the children of peasants with those of even the lowest of our middle classes. But in Germany, I *constantly* found the children of the highest and of the lowest ranks sitting at the same desk, and in almost every school I saw the children of the lowest and of the middle classes mingled together.

In Berlin, one of the teachers, on my asking him whose sons the boys at one of his forms were, requested them to tell me in what occupations their fathers were engaged. From these boys I learned, that one was the son of a clergyman, another of a physician; that others were the sons of small shopkeepers, and others the sons of errand-men and porters. Now, were not the children of the errand-men and porters very much more civilized, polished, and, if I may use that that much abused word, more *gentlemanly* than the same class of children in England, such an association would be totally impossible. And yet this to us incredible state of things, exists with infinitely less discontentment and social disturbance than we find among our laboring classes in England.

But it must not be imagined that the educational system is in a stationary state, that the people and the government are resting upon their oars, or that they now think that they have done enough, and that they can let the stream bear them on without further exertion. Far, far otherwise; on every hand extensive improvements are going on, as if they had only commenced last year, to take any interest in the question, and as if they were only now beginning the work, like fresh laborers. Here I found a new and handsome school-house just finished; there, another one in building; and here, again, old houses being altered and enlarged. In one town I found them preparing a great building for a normal college; in another, I found them preparing to remove one of these noble institutions to a more commodious and larger set of buildings; and wherever I traveled, I found the authorities laboring to establish infant schools, as well as to perfect the educational institutions of their several localities. It sometimes appeared to me as if all the resources of the government must be devoted to this object; whereas my readers must recollect that, except in the cases of the normal colleges, this great work is effected by the people themselves; and that the enormons expenditure, by being divided between all the different towns and parishes in the kingdom, is scarcely felt. Since 1816, every year has witnessed a further progress: old schools have been pulled down, new ones have been erected; the old and less efficient teachers have gradually died off, and their places have been supplied by excellently trained masters who now direct the schools; the young men who are about to enter holy orders have been obliged to study pedagogy, in order to fit themselves to be inspectors; the regulations respecting the factory children, which I have given in an earlier part of this work, have been put in force;

the *minimum* of the teachers' salaries has been considerably raised, and the system of teachers' conferences has been perfected, and put into operation.

I shall now show what restrictions exists on the free choice of books by the teachers. The Prussian government has here had two evils to guard against: one of these was the retarding of the gradual reform of school-books, which reform will always take place, when the teachers themselves are learned men, when they thoroughly understand the theory and practice of pedagogy, and when they are not fettered by unwise restrictions; and the other was, the admission into the practical schools, of books of an irreligious or immoral tendency. These two evils are guarded against in the following manner:

No book can be used in any school of the provinces, until the authorities composing the provincial Schulcollegium, which has the direction of the higher schools and gymnasia, as well as of the normal colleges of the province, have licensed it, or sanctioned its admission. Any book which has been so sanctioned, can be employed by any schoolmaster of the province in which it was licensed. There are, in every province, a great number of works on religion, history, science, &c., which have been thus licensed, and from which the teachers are at liberty to choose. But, if a schoolmaster writes a book, which he deems better qualified for school use than those already published, or if he desires to employ a work written by some one else and which is not licensed, he forwards a copy of it, through the inspector, to the provincial authorities, in order to obtain their consent, which is only refused, where the book is positively imperfect or unfit for the young. In the schools, which I personally inspected, I generally found the school-books very excellent, and written either by teachers, or by some person engaged in the educational profession. Coming as they do from men of very long experience in the practice of pedagogy, they are generally well adapted to answer the wants, which the writers themselves have experienced, in the exercise of their professional duties. With the above restrictions, the choice of books is left entirely to the schoolmasters.

The character of the instruction given in all the German schools is suggestive; the teachers labor to teach the children to educate themselves. There is little or no "cram" about it, if I may use an old university phrase. In most of the best primary schools of England, the teacher still contents himself with the old cramming system; that is, he tries to crowd the memories of his scholars with facts, and continually exercises their memories, without ever attempting to develop and strengthen any of their other intellectual faculties. Now, we know but too well, that a man may have the most retentive memory, and the best stored mind, and yet remain as incapable of reasoning, as improvident, and as irrational as ever. He may be full of facts; but may be as unable to make any use of them, or to turn them to any good account, as one bereft of the faculties of speech, sight, and hearing. If a man can not use his reasoning powers, he is much better without knowledge; to impart facts to a fool, is like intrusting fire to a madman. The great *desideratum* for the poor, as well as for every one else in this world, is a capability of using the reasoning faculties; not that this will always save a man from false ideas and from irrational conduct, but that a man who possesses it will be *more likely* than any other, to take a right view of his position in life, his duties, and his advantages, and will be more likely to understand the best means of improving them.

Next, then, to implanting good principles in the child, the first object of every system of instruction should be, to teach it how to use the high and important faculties, which Providence has given it, as the means by which to insure its temporal happiness and continued self-improvement. Facts are necessary, but facts alone are not enough: to cram a child's mind with facts, without constantly exercising its reflection and its reason, is like feeding it with quantities of rich viands, and denying it all bodily exercise.

The German teachers are, therefore, taught that their duty is to awaken the intelligence of their children, far more than to fill their heads with facts, which they would not know how to use, unless their reasoning powers had been first cultivated. The schoolmasters do not therefore hurry over many facts in one lesson; but endeavor to make them think and reason about the subject of instruction.

The method of instruction is left to the unfettered choice of the teachers, so that it is impossible to speak with certainty of the methods pursued in the majority of the schools; but in all that I visited, I invariably found the simultaneous method pursued. By this the scholars are divided into different classes, and each class is instructed separately. This is not done on the old shouting plan, where one or two clever boys give the answer, and all the others follow in the same breath, and often without having known what the question was. Not so: the class under instruction first reads a section or chapter from the school-book, relating to the subject of instruction; the teacher then endeavors to illustrate what the children have been reading, to make them clearly understand it, to assure himself that they do *understand* it, and to impress it more clearly and firmly upon their memories. All this he does by suggestive questions, which he himself does not answer, until he has first tried whether any of the children can answer them for themselves. When a question is put, all the children, who are prepared to answer it, are told to hold up their hands, and the teacher then selects one child, who stands up and gives what he conceives to be the answer; if he is wrong, another is selected to correct him, and so on in like manner; but until the teacher has called upon some one to answer, not a single word is allowed to be spoken by any member of the class. If no one can answer the question, the teacher, before answering it for the children, excites their curiosity about it by questions and hints, and stories illustrating or partially explaining the subject under discussion; and when he has succeeded in interesting the whole class in the answer, he then gives it, but not before. By these means, the reflective powers of the children are exercised and trained; they are taught to think, to inquire and to reason, and their minds acquire strength and activity. During every lesson the teacher stands, and the children sit before him at their desks. The most perfect silence is observed, except when broken by the answer of the scholar fixed on to reply, or by a question made by a scholar seeking explanation, or by a laugh at some amusing story or joke of the teacher. No lesson is continued long. The subjects of instructions are changed about three times in every two hours; and, at the end of every two hours, the children of all the different classes meet in the play-ground, under the charge of one of the teachers, to get some fresh air and a little exercise.

The great object of all this is to make the lessons as interesting and attractive as possible to the children, to keep up their attention, and to gradually develop all the powers of their minds.

This system enables the German teachers to watch and tend the progress of each individual child. No child can screen idleness or ignorance, behind the general shout of the class. The teacher sees instantly, if a scholar fails often to hold up his hand; and as he questions those, who do hold up their hands, by turns, he soon finds out if a child is really attending or not.

One thing which greatly surprised me in all the German and Dutch schools was, the great interest the children evidently took in the subject of instruction. This is to be explained entirely by the manner, in which they are treated and instructed by the teachers. The teachers address them as intelligent, rational beings, and in a conversational manner, as if they expected them to listen and to understand. The teachers further excite their interest by showing them, in all their lessons, the practical use of the knowledge they are acquiring. Constant references are made to the different pursuits, in which the children will be engaged after leaving school; to the commerce of the country, and the way in which it is supplied with the various articles of foreign produce which it requires; to the duties of citizens; to the history of the country; to its produce, its physical chacteristics, and its political relations; to farming, in its various branches; to the great inventions and vast undertakings of the day; to the wonders of foreign countries; and, in fact, to all the newspaper topics of the day.

I have myself been obliged to answer questions in the German and Dutch schools about the navy of England, the wealth of England, our metropolis, our colonies, and the miseries of Ireland.

Instruction, or amusement which will excite the scholars to seek instruction, is sought from all the subjects and allusions started by the lesson. The children are made to see the end of instruction and the object of schools in every lesson which is given them. The teachers encourage them by words and looks of approval.

A few words, such as "that's right, Charles," "that's a very good answer," "you have explained it very well," "well done indeed," and such like explanations, stimulate the children as if they were at a game. Added to this, that the teachers are so admirably drilled in the art of teaching, that they perfectly understand how to make every thing clear and comprehensible to the least intelligent scholar of the class, while they are so well educated, that they are able to illustrate each lesson by a hundred interesting stories or descriptions.

The subjects of instruction in the primary schools vary in the different classes. In those for the younger children, who have only just entered the school, they are confined to Scripture history, reading, writing, arithmetic, and singing; but, in the classes for the elder children, not only are higher and more advanced exercises in the above subjects given, but the scholars learn also German history, geography, drawing, and mental arithmetic. In this last subject of instruction, I sometimes found astonishing progress made. Besides the above lessons which the schoolmasters are obliged by law to teach in all schools, the children learn to recite the most beautiful of the Psalms and the finest passages of Scripture, as well as the most celebrated national melodies. In the higher elementary schools, or, as they are called, the higher burgher schools, which are open to all the children who like to enter them after leaving the elementary schools, and which are attended by the sons of small shopkeepers and of laborers also, the course of education is much higher, embracing not only a continued exercise in the different subjects of instruction which I have enumerated, but in addition to these, geometry, universal history, and the French language. No child is *obliged* to attend these schools; but all are admitted, who wish to continue their education there after leaving the primary schools. These schools are only to be found in towns; but each town is *obliged* by law to support *at least* one of them. They are generally very well attended by the children of small shopkeepers, and contain also many children from the poorest ranks of society.

The method of teaching these subjects generally, has already been given under the head of Primary Schools in Germany, in the language of Prof. Stowe and Mr. Mann. We will now give from Prof. Bache, and other authorities, the organization, study table, and methods of instruction of several schools of different grades.

BURGHER SCHOOL AT HALLE.

The series of schools, which now cluster about the Orphan-house of Halle, are called after the name of its founder, the Franke Foundations, and embraces the whole range of public instruction. It begins with the common or elementary schools, in which the instruction terminates at the age of twelve or fourteen years; contains a "higher" or middle school, called, also, a "burgher school," the courses of which end at fourteen or sixteen years, and where the pupil is prepared to enter life as a tradesman. Also, a "real school," its courses ending at sixteen or eighteen, and intended to prepare for the higher mechanical occupations; and a classical school, or "gymnasium," retaining its pupils until eighteen or nineteen years of age, and fitting them for admission to the university.

The attendance on these schools varies from year to year, being made up of pupils from other parts of Prussia, as well as from Halle. The attendance, at the date of Dr. Bache's visit, was as follows:

Free School for boys	350,	in four classes.
" " " girls	350,	" "
Burgher School for boys	600,	twelve "
" " " girls	400,	eight "
Superior " " "	100,	six "
Real " " boys	150,	five "
Gymnasium or grammar school	300,	six "
Pædagogium	80,	five "
Total,	2330	

In the establishments for education there were at the same time, in the orphan house, 114 boys and 16 girls, in the boarding school 230 boys, and in the pædagogium 80, total 436.

The school which the boys of the orphan-house in general attend, is that called the "burgher" or citizens' school, sometimes also called middle school. Its objects are thus defined, first, "so to train the sons of citizens by instruction in useful science, that, at the age of fourteen years, they may be in a condition to begin a handicraft, or other trade;" second, "to prepare the pupils for the lower classes of a gymnasium, or for the classes of a real school, to accomplish which latter purposes Latin and French are taught."

The lower classes are, in fact, those of an elementary school, and the boys who leave the orphan-house at fourteen, are instructed exclusively in this establishment. The few who are selected to remain after fourteen go to the Latin school; Latin and French both are, however, studied in the upper classes of the burgher school, and the aptitude of the orphan pupils for language, is thus put to the test. The school is divided into four classes in reference to the progress of the pupils, and each is subdivided for convenience, with a teacher to every subdivision. Thus the same teacher gives instruction in all the subjects of study, to a class of boys numbering, on the average, about fifty.

The branches taught are: Exercises of speech and thought. Bible history. Religious instruction. Mental and written arithmetic. Elements of geography. (Knowledge of home.) Reading and writing taught together. Reading. Calligraphy. Stories from history. German grammar. Composition. Geography of Germany. German history. French grammar. General history. Higher arithmetic. Elements of geometry. Bible lessons. Christian morals. Christian doctrines. Elements of Latin.

There are teachers of singing and drawing, besides the regular class teachers. The pupils are examined privately once every six months, and publicly at Easter, when the change of classes takes place.

The exercises of speech and thought, the first subject on the above list, constitute the breaking-in, as it were, of the child, and being at the very threshold of instruction, try the teacher's skill more than many a learned branch. He must teach the pupil to think, taking care that his thoughts are expressed in appropriate words. Pestalozzi, who first practiced upon this idea, drew the child's attention to the human frame, as the subject of contemplation; others have preferred to bring him in contact with nature, in general, by making simple natural phenomena the basis of the inductive lessons; others, not surrounded by nature, made man and his dwelling their theme; others introduce simple lessons on objects of nature and art, which can readily be presented to the child for his examination, and on which, as a basis, to rear the superstructure of natural history, physics, and technology, in his advanced course. All these are good in their way, but such as I saw tried seemed to depend for their efficacy upon the circumstances of the school, and to be better or worse as the child found means to apply his newly acquired powers of perception, to observe for himself. Of all the plans, when the school is rightly situated for it, a reference to nature produces the best training of the heart, as well as the mind of the child. It would be impossible to present, here, even extracts from the numerous works which contain the methods employed in these exercises.

The Bible history and religious instruction next referred to, are principally given orally, the morals of the Bible and the events which it describes, being put into such a form that when the sacred book itself, at a later day, comes into the child's hands, he is prepared to read it with proper interest. This plan is diametrically opposed to that which employs it as the beginner's horn-book, and from which, I feel bound to say, I have never seen any good result.

I can not enter into details in regard to all the branches, but must be satisfied with noticing two which are here taught particularly well, namely, reading and writing, and geography.

The reading and writing are taught at the same time, according to the method of Harnisch, developed by Scholtz. The child makes a letter on his slate, after a copy upon the blackboard, and is taught to name it. The German language having a fixed sound for each letter, when the sound of the letter has been learned, not its common arbitrary name, but the sound which it has in composition, the pupil has made some progress toward knowing how to form combinations, which is the next step, the vowels being placed alternately before and after the consonant. These combinations are first written on the slate, and then pronounced. The next exercise consists in placing a vowel between two consonants, which is followed by other simple combinations. These being classified by careful study, the child is soon able to compose simple sentences, in which his ideas are developed, so that the mechanical operation of writing and of reading is interspersed with intellectual exercise. In this the talent of the teacher is strikingly exhibited, and a prescribed routine of instruction would fail in its object. The written letters being once learned, the next step is with the printed, and a reading book is not introduced until the child has felt the necessity of it in his further progress. It is then a relief, and not a task.

I saw, here, a class which had been under instruction for only nine months, the pupils of which wrote short sentences very legibly in a hand of medium size, spelled them correctly, and read them distinctly.

This method of learning to read is, in a great degree, inapplicable to our language, in which the vowel sounds are so numerous; but the union of reading and writing may have its advantages. The characters of the ordinary German writing are composed of very different forms from those of our round hand, and which are more simple, and, in general, angular; hence no considerable dexterity of hand is required to trace the letters, and only a brief practice in elementary forms is required. I saw classes of children of ten and eleven years old, at Zurich, who, by being constantly practiced in this method from their earliest instruction, had acquired a very striking facility of expressing their ideas clearly and correctly in writing. The method produces a facility of composition, in writing, as that of Jacotot does a fluency in speaking. The orphans entering at ten years of age, do not, in general, pass through this class.

The geographical instruction, founded upon the method of Pestalozzi, proceeds on strictly inductive principles, and is an example of how much may be done by making the pupil proceed from the known to the unknown. The following was the course of a recitation which I attended on the subject. The teacher drew, first, from the knowledge of the pupils of different objects or bodies, a definition of the term body, then led them to define extension, dimensions, &c., and thus furnished them ideas of space. Sunrise and sunset were used for establishing the position of the cardinal points, and that of the class-room was determined in reference to these. Then commencing with home, with a map of the city of Halle, they gave an account of its localities, and the history connected with them. Widening hence in circles, the natural and political features of the surrounding district were described, always indicating the real directions of places, &c. The pupil thus grasps every step of geographical knowledge; begins with his own house, rambles through his own town, makes excursions in its neighborhood, sets out on his travels through his fatherland, visits foreign parts, sees what is worth seeing in the natural and artificial state of the country, finally learns the relation of its parts and of the whole to other worlds, and thus the interest is kept up from the first to the last. The reverse method I compared with this over and over again; some teachers have found this tedious, others have mixed the two systems, but, judging by the comparative results, I give this method greatly the preference over others, as not only teaching geography, and connecting history with it, but enlarging the general intelligence, while it improves the memory. In the upper classes, the pupils use maps without names, and draw maps on the board, marking localities, &c. At other times, the places are indicated by one pupil, and named by another, with other variations of exercise. In the lower classes, the responses were frequently repeated by the whole class, and in the upper classes the instruction was more addressed to individuals. With all the inherent merits of this method, I have seen it wholly marred by a dull teacher.

The inductive method applied to any branch of knowledge requires time, patience, and some skill on the part of the teacher. The routine method, or positive teaching, is much easier to the instructor. The former at every step unfolds the mind, the latter frequently overburthens it. If the positive knowledge acquired by the first is entirely lost, the habit of thinking remains, while, if acquired by the second, there is nothing left unless some improvement of memory, and general development of the reasoning powers.

A pupil who has properly improved the advantages of this school, will have acquired a reasonable knowledge of the German language, of reading, writing, and arithmetic, of geography and general history, will be familiar with the history, morals, and doctrines of the Bible, and his general mental and moral development will be such as befits his age. If especially industrious or apt, he will have had an oportunity of beginning Latin and French, and if he prove to have a facility in language, will be transferred to the Latin school. It would seem that, if he have a peculiar disposition for mathematical studies, he should be sent to the real school to prepare him for one of the higher mechanical callings. If he should have had this advantage, on reaching seventeen years of age, he would have added to his stock of knowledge:

Further acquaintance with German and French. Latin and English if required, though not regularly taught. History and geography. Natural history. Mathematics. Practical arithmetic. Physics and chemistry. Religion. Improved writing, and drawing.

The Latin school, into which the more intelligent pupil now actually enters, conforms to the plan of the Prussian gymnasia. This gymnasium has six classes, divided each into two parts, and forming a connected series of instruction, one part being six months behind the other, except that the pupils of the two parts are sometimes assembled to listen to the same lecture.

The branches studied are: Religious instruction, Latin, Greek, French, mathematics, elements of physics, history, psychology, and logic. Poetry and rhetoric, and Hebrew or English, as the student may desire.

MILITARY ORPHAN-HOUSE AT ANNABURG.

The following plan of instruction was prepared by Dr. Harnisch, one of the most distinguished teachers of Prussia:

The course is divided into two parts, one an elementary course, consisting of religious instruction, arithmetic, the mother tongue, singing, writing, and exercises of induction, taught in four classes, between the ages of ten and fourteen. The other, a higher course, taught in three classes, and between the fifteenth and eighteenth years of age of the pupils. In order to rise to the place of a non-commissioned officer, the pupil must have gone through at least the lowest of the classes of the higher school. The subjects of instruction in this school are: religious instruction, arithmetic, singing, the German language, calligraphy, geography and history, algebra, geometry, trigonometry, and drawing.

The courses in the different branches are arranged as follows:

FIRST. *Religious Instruction.*

LOWER SCHOOL.

Class VII. Bible stories, psalms and hymns, appropriate to the season. Four hours per week.

Class VI. Histories from the Old and New Testament, portions of the history of the Christian church, catechism. Four hours per week.

Class V. Reading and explanation of the Bible, and of its arrangement. The gospel and historical works are selected, and the history is connected with the geography of the Holy Land. Catechism. Five hours.

Class IV. Doctrines of the Lutheran church, taught by Luther's catechism. Five hours.

UPPER SCHOOL.

Class III. Moral instruction, duties to God and man. Three hours.

Class II. Reading the Bible with comments, the pupils making abstracts. Three hours.

Class I. (Two years.) The first year a repetition of Luther's catechism. The second, a history of the Christian dispensation. Three hours.

Every class commits verses from the Bible to memory.

SECOND. *Arithmetic.* Mental and written arithmetic are taught together, that the readiness afforded by the one, and the accuracy of the other, may both be cultivated.

LOWER SCHOOL.

Class VII. The four ground rules, with three places of figures mentally. Application to questions in weights and measures. Three hours.

Class VI. The same rules extended. Three hours.

Class V. Fractions, with applications to weights and measures. Three hours.

Class IV. Proportions. Three hours.

UPPER SCHOOL.

Class III. The applications of proportions to questions of weight, strength, value, time, and general quantity. Two hours.

Class II. Exercises in practical algebra. Two hours.

Class I. Review of the course. First year, practical operations. Second, theory of arithmetical processes. Two hours.

THIRD. *Vocal Music.*

LOWER SCHOOL.

Classes VII & VI. Practice of songs, adapted to youth of a cheerful, serious, military, or religious cast, with one part. Two hours.

Classes V & IV. Choral and other songs, with the different parts. Elements of music. Two hours.

UPPER SCHOOL.

Classes III, II, & I. More difficult choral pieces. Theoretical instruction continued. One hour. There is, besides, instruction given to a select choir, intended to conduct the vocal exercises of the church.

FOURTH. *Reading* In the lower classes, a readiness in reading, and in the higher, the style of reading, is attended to especially. Pieces learned previously, by heart, are recited.

LOWER SCHOOL.

Class VII. A good pronunciation, and some facility in reading. Six hours.

Class VI. Readiness in reading, and repeating the substance of what has been read. Familiar illustrations. Five hours.

Class V. Reading some work in reference to knowledge useful in common life. Four hours.

Class IV. Reading, with attention to emphasis. Four hours.

UPPER SCHOOL.

Class III. Reading the Bible and sacred melodies, with the view to correct reading in this kind of composition. Two hours.

Class II. Reading various selected works, in and out of the class.

Class I. Reading continued, and recitations from works previously read.

FIFTH. *Orthography and Writing.* These may be taught together in the same way as mental and written arithmetic; the teacher is, however, at liberty to follow his own method.

LOWER SCHOOL.

Class VII. Copying on slates from the blackboard. Four hours.

Class VI. Copying on paper, from the board, and from books. Four hours.

Class V. Writing from copy-slips, from books, or from dictation. (Practice in spelling and writing.) Four hours.

Class IV. Similar exercises continued. Four hours.

UPPER SCHOOL.

Class III. Copying useful papers, such as registers, accounts, contracts, &c. Two hours.

Class II. Calligraphy, with Roman as well as German letters; practice in orthography; reading of letters and documents in various handwritings. Two hours.

Class I. Copying papers relating to the management of the institution, as a practical introduction to business. One hour.

SIXTH. *Useful knowledge taught by induction*

LOWER SCHOOL.

Class VII. The pupils give their ideas, verbally, of surrounding objects of the most simple kind, of the commonest productions of nature and art. Conversations relating to them. Drawing the most simple mathematical figures on the slate. Three hours.

Class VI. Descriptions of animals and plants, the former in the winter, the latter in the summer term. Written remarks on these, serving to afford exercise in the formation of phrases and in orthography. Four hours.

Class V. The most essential parts of physics and natural history, the pupils taking notes of the lessons. Four hours.

Class IV. Compositions on various subjects. Letters relating to civil and military affairs. Four hours.

UPPER SCHOOL.

Class III. History of Prussia, and drawing of maps. Four hours.

Class II. General geography, particularly that of Europe. Passing from physical to political geography. Civil geography in connection with the former. Five hours.

Class I. Universal history. One year is devoted to ancient and one to modern history. Selections are made of the more important parts of history. Five hours.

The remaining studies only belong to the higher school.

SEVENTH. *German grammar and style.*

UPPER SCHOOL.

Class III. Logical and grammatical instruction of the German language taught.

Class II. Idiom of the language. Compositions on military subjects, with especial reference to correctness of grammar.

Class I. Acquaintance with the best writers. Exercises of composition on subjects taken from history.

EIGHTH. *Geometry.*

UPPER SCHOOL.

Class III. Teaching the names and properties of mathematical figures by induction, in connection with drawing.

Class II. Equations, with application to problems of common life.

Class I. Elements of trigonometry.

NINTH. *Drawing.*

UPPER SCHOOL.

Class III. Drawings from common objects, varying the positions, &c.

Class II. Copying flowers, or drawings of implements.

Class I. Architectural drawing with instruments, drawings of furniture, &c.

Dr. Bache makes the following remarks on the above plan:

I have allowed myself to present this extended programme, because it conveys, in as brief a compass as possible, excellent ideas of the succession of courses in an elementary school, and in a technical or trade school, for such the higher school must be considered. It should be remembered that the main purpose is the preparation of youth for the military service, and hence that the wants of the service are especially consulted. Another fact must be remembered, namely, that this is a Lutheran school, and therefore the religious instruction is adapted to the particular views of that church. The course of morals of the third class, I must say, however, seems to me out of its place, for although our duties to God and our neighbor are of course best learned from his Word, yet their inculcation by precept and example can not commence too early.

In the arithmetical course, the union of mental and written arithmetic is absolutely essential. The gradation appears to me good, and the application to questions of common life gives a zest to such studies, attainable in no other way. The theory of arithmetical processes, however, should accompany or follow more nearly their practical acquisition. Indeed, if they are taught as they ought to be, by induction, the theory goes with the practice.

If the youth at Annaburg take the same pleasure in the exercises of song, from the elements to the completion of the musical course, as those of the school* actually superintended by the author of this project, the success will be complete.

The connection of orthography and writing, especially if combined with early reading, is natural.

The exercises of induction, which in the lower classes are well drawn out, deviate from the appropriate track in the fourth class, and in the geographical and historical courses do not return to it. The system in both these branches is rather synthetical than inductive. There is a great temptation to break away from this method, into that of giving positive instruction, from the apparently greater rapidity of progress of the pupil; some teachers have abandoned it altogether, as too slow, though ultimately to their cost, as appeared to me in cases where I had an opportunity of comparing the results.

The writing is preceded by an introductory course of drawing, which might with excellent effect be so extended as to branch out into complete courses of drawing and writing.

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* Seminary for Teachers at Weissenfels.

As this plan results from an extended experience, the number of hours of instruction, per week, necessary to secure the results, is an important datum, and as such I have retained it, whenever it was inserted in the original programme.

PUBLIC SCHOOLS OF BERLIN.

The capital of Prussia is well supplied with public educational institutions of various grades, from the Krippen, (or mere nurseries for children whose parents are obliged to labor away from their homes for their daily support) und Kleinkinderbewahranstalten, (or institutions for the care of children between two and four, resembling infant schools, but not doing much in mere instruction,) to the university, with its departments of law, theology, medicine, and philosophy, and schools of preparation for gardening, agriculture, commerce, trades, and the mechanic, and fine arts. Of these, we have selected for description a few which belong to the department of primary education as understood in this country, as well as two which rank abroad with secondary schools, but correspond to the grade of public high schools, as now organized in our large cities, as parts of their systems of public instruction.

ELEMENTARY SCHOOLS.

The elementary schools of Berlin are not organized as a part of a system of public instruction; they are partly private and partly public; some of them are intended exclusively for the poor, and are supported entirely by the city, and others are private establishments, in which the tuition of such poor children as attend, are paid by the city. In the burgher, or higher class of primary schools, as well as in the gymnasia and real schools, there are classes which belong properly to the elementary schools. In 1827, Mr. Reichelen, member of the school council, devised a plan of organization for a class of schools for poor children in Berlin, differing in some respects from that adopted in the kingdom at large. From the document embodying this plan we make a few extracts for the sake of explaining the organization of the schools, and illustrating the difference between these schools for the poor and our common schools.

Although, in the middle class, the co-operation of the parents and the influence of families may be depended on, the contrary holds with children of the lowest, whom it is often necessary to withdraw as much as possible from the baleful influence of the bad example of their parents. In the case of these children, the exertions of the school are wholly unassisted.

In the new organization, the two sexes should be separated; which will not increase the expense, provided the schools be so proportioned, as that one complete school shall contain two divisions having seventy-five each, one for boys and one for girls; these two divisions forming but one parish school for three hundred children, in one building.

The special character of the instruction proper for poor children, is defined in these two words, *prayer* and *work*

The subjects of instruction for the first class should be:

1. For religion: the Bible, catechism, the positive truths of Christianity.
2. For the German language: language considered as the expression of thought; the most general rules of grammar, clear and intelligible pronunciation, reading and orthography.
3. Writing.
4. Arithmetic, to fractions and the rule-of-three, inclusive.
5. Singing, and particularly exercises in sacred choral music.

For the second class of boys, the most general elements of the natural sciences, of geography, and national history, as well as the elements of geometry and linear drawing should be added.

For the second class of girls, instruction in needle-work, knitting, &c.

For boys of from six to ten years of age, first class, twenty-six lessons of one hour each per week, from eight to eleven, and from two to four, every day; thus:

3 hours for religious instruction, (principally narratives from the Bible.)
12 hours for the German language, pronunciation, reading, orthography, &c.
5 hours for arithmetic; 3 for the slate as far as division, and 2 for mental arithmetic.
4 hours for writing.
2 hours for singing, (without counting the verses sung at the beginning and end of each day.)

26 hours.

For the second class of boys, from ten to fourteen years old, thirty-two hours of lessons per week, from eight to twelve, and from two to four, every day; thus:

6 hours for religion, instruction in the Bible, and catechism.
10 hours for the German language, reading, grammar, intellectual exercises.
5 hours for arithmetic, on the slate and in the head.
4 hours for writing.
2 hours for geometry, and linear drawing.
3 hours for natural philosophy, geography, and history, &c.
2 hours for singing, (not including the verses sung morning and evening.)

32 hours.

Girls' school, first class, from six to ten years old, twenty-six hours' lessons a week; thus:

3 hours for religion, (narratives from the Bible.)
7 hours for the German language.
3 hours for arithmetic, on the slate and mentally.
3 hours for writing.
2 hours for singing.
8 hours for needle-work, &c.

26 hours, from eight to eleven, and from two to four.

The second class of girls, from ten to fourteen, thirty-two hours' lessons; thus:

6 hours for religion.
8 hours for the German language.
4 hours for arithmetic.
3 hours for writing.
3 hours for singing.
8 hours for needle-work, &c., (in the afternoon.)

32 hours, from eight to twelve, and from two to four.

A child shall be in a condition to pass from the first class to the second as soon as it can read well.

It may perhaps seem strange, that in this plan of study no mention should be made of the time devoted to exercises of the memory and the mental powers. But the committee has considered that these exercises are included in the course of study, which keeps the memory and intellect constantly in action. The lessons in the German language will always furnish exercises of this kind; and in charity schools, above all others, it is necessary to avoid whatever is superfluous.

The children of the lowest class have generally received an ill bent from the example of their parents; the strictest discipline is therefore required. Order, neatness, activity, prompt obedience, are by no means the least important things a child has to learn. The kind of instruction, the gravity of the master, his devotedness to his pupils, are of themselves a solid ground-work for discipline. But rigor is sometimes necessary; and in a school for the poor especially, discipline should be inflexible in cases of disorder or indolence. But let the masters never forget, that the severest measures of discipline should be pervaded by a sentiment of tenderness and love, which chastises only to improve.

There are seven evening schools in Berlin. It will be sufficient to institute three more of fifty scholars each, two for boys and one for girls. The three ablest and most zealous parish schoolmasters shall be engaged to give from eight to twelve hours' lessons a week in the evening, for which they shall be paid a hundred thaler, (15*l.*) Reading and writing will be constantly taught there, and two hours a week devoted to religious instruction.

A greater number of evening schools will be opened, if they are found to be wanted.

Before entering upon a detail of the expenses which the city must bear for the support of fourteen parish charity schools, we will mention the very slight revenue which these schools can draw from other sources.

1. A government order, dated January 30, 1827, directs that in every parish charity school each pupil shall pay a fee of one silber-groschen (about five farthings) a month, in order not to violate the principle, that every father of a family is bound to contribute something to the school, even though he should claim for his children the favor of a gratuitous education; for the exaction of this trifling payment does not take from the instruction its gratuitous character, and this imperceptible charge produces nevertheless, in a school of three hundred children, the sum of 120 thaler, (18*l.*)

2. Amongst the poor, many who are unable to pay the terms of private schools, can nevertheless very well give, besides the groschen per month fixed by the minister of public instruction, a further sum, varying from five groschen as a minimum, to ten as a maximum. Out of three hundred children, this would apply to at least a fifth; and the minimum five groschen for sixty children, will give a revenue of 120 thaler, or 1680 for the fourteen schools, (136*l.*) This extraordinary fund (*Aushulfe-fund*) may be appropriated to the maintenance of the evening schools, to the instruction of children of a higher class who have fallen into poverty, and to rewards or pensions for schoolmasters in their old age, or to methodological courses for their improvement; so that the town would have no other expense to support than that of the fourteen parish charity schools.

3. Finally, the donations which the generosity of the citizens may give to the schools, but which can not be calculated on here, will form another resource for improvement in the education of the poorer classes.

The excellence of a school depends entirely upon the master; the choice of the master is therefore a matter of the first importance. In a school for the poorest class especially, where every thing is to be done, and where the master has constantly to struggle against the pernicious influence of the family and companions of the child, he should possess devotedness to his calling, patience, knowledge, an aptitude and taste for teaching; and with all these qualities, that rare disinterestedness which induces perseverance in a career at once humble and unaltering, and that enduring serenity of soul, that pious zeal which alone can secure prosperity to a school.

The masters who are examined and declared capable, shall be appointed for life; nevertheless, in case of negligence or misconduct, they shall be dismissed without appeal, by an order from the town authorities, approved by the school board.

Care should be taken, that whenever it is possible, the wives of the schoolmasters shall instruct the little girls in needle-work.

The immediate superintendence of each poor's school shall be specially confided to a committee consisting of one of the clergymen of the parish, named by the town school committee, and a member of the administration of the poor's fund, charged specially with the inspection of the external business of the school.

The supreme superintendence resides with the poor's administration and the town school committee, of which the *Stadt-Schulrath*, or school councillor for the town, shall always be a member.

The under masters shall be subject to the head masters; they may be dismissed at will either for incapacity or misconduct.

The purchase and maintenance of buildings for the schools in the various quarters, the choice and superintendence of the masters, the administration of the school funds belong to the administration of the poor.

The charity board of each quarter, the clergyman, and the officer charged with the special superintendence, shall attend to:

1. The admission of pupils.
2. The control of the attendance at the schools.
3. The departure of the pupils.
4. The annual reports.

1. As there will be fourteen parish charity schools required, the town will be divided into fourteen school wards, or districts, each having a complete school, (boys and girls.) All parents living in each district, shall apply to the charity board, and particularly to the special officer, to obtain admission for their children to the school.

This admission shall take place generally at two periods of the year, Easter and Michaelmas, at the commencement of the course.

The officer shall determine whether the child shall be admitted gratuitously, (always paying one groschen per month,) or be made to pay from five to ten silbergroschen, which will form the extraordinary fund.

This sum shall be paid in advance, from month to month, to an officer of the charity board chosen for this purpose, and shall be added each month to the extraordinary fund.

When the number of pupils fixed for each class of boys or girls (seventy-five) shall be complete, no more shall be admitted, and applicants shall be sent to the neighboring schools.

2. The regular attendance at the school shall be an object of special control and the most active vigilance; for this is the source from which flow all the advantages the school can produce. It would be very fortunate if parents and children were always willing of themselves to facilitate the measures adopted to secure regular attendance at the schools. Unhappily this is not the case, particularly in great cities. Although it is lamentable to be forced to use constraint, it is almost always necessary to commence with it; though in a town so populous as Berlin, its enforcement is attended with much difficulty.

In order to draw to the school all the children of an age to attend, the schoolmasters shall keep a register of attendance, and shall send, at the end of each month, an extract from this register, pointing out those who are most frequently absent.

The poor's commission, or one of its members, shall send for the parents, and if the excuses are insufficient, shall warn and threaten them. Every three months a list shall be made of the parents who will pay no regard to the repeated remonstrances of the commission, and the poor's administration shall then have recourse to means of constraint, conformably to section 48, of title XII.,* in the second part of the general code, which adjudges the penalties for this offense. As an example to others, it would be well to publish, from time to time, a list of the parents who shall have been fined for not sending their children regularly to school.

But it is not enough to insure, as far as possible, this regularity in the children who come to school; other measures are needed to secure that no poor child whatever be deprived of elementary instruction. In great cities there are always a considerable number of unfortunate persons who have no fixed residence, who are shifting about every quarter, every month, and often every day. We see only one way of coming at these, which is this: to communicate with all the private establishments of elementary instruction, that are not under the direction of the town, and to arrange that, at a certain time, all the primary schoolmasters in the town, without exception, shall deliver to their pupils a certificate of attendance, the form of which shall be printed and sent to all the schools. The parents shall be obliged to show these certificates. At the same period, the municipal police, or commissions chosen from among the citizens, shall, by the aid of the census tables, effect a general and simultaneous inspection of the whole town. The list of the parents who shall not have shown the certificates of attendance at school, shall be made up in each district, and they shall be summoned before the correctional police and fined according to law, and compelled to enter their children in the schools.

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* See page 95.

The execution of such a measure would doubtless depend much on the zeal of the authorities intrusted with it; but difficulties should not deter us from the performance of the sacred duty of remedying so deplorable an evil.

3. The law requires that the instruction of the school should be continued, until the clergyman charged with the examination of the children shall deem them sufficiently enlightened on the subjects most important to a rational being of their class. No fixed age will therefore be named at which they shall quit the school. This will be determined by an order from the master of the school, and the clergyman charged with the special inspection; and since nothing superfluous will be taught in any parish poor's school, this decision will depend upon the child's having profitably gone through the course of instruction of the school, and acquired those moral qualities which its influence ought to have produced.

It will in general require at least six years fully to accomplish the end of an intellectual and moral education. Thus, the greater part of the children who enter at six or seven, will be sufficiently instructed at thirteen to quit.

The leaving of the school shall take place only at two periods of the year, Easter and Michaelmas, after a public examination. At the end of this examination, the ecclesiastical inspector and the master of the school shall make a list of the pupils who may quit. There shall be delivered to each a certificate of departure, the form of which shall be printed; and the most distinguished shall receive, by way of encouragement, books suited to their capacity; the expense will be defrayed by the extraordinary fund.

It would also be very useful that the citizens should be bound under a penalty not to take into their service or apprenticeship any child who had not a certificate either of departure or of attendance.

4. The annual reports of the ecclesiastical inspector and the officer of the charity board will serve to measure the progress of the schools. They shall treat of the internal state of the school; of the instruction and discipline, as well as the household expenses; and shall point out imperfections, to the remedy of which the poor's administration and the school board shall direct their efforts.

Dr. Bache makes the following remarks on this class of schools in 1838:

There are at present nine public elementary schools in the city, but if the classes were confined to seventy-five pupils each, as originally intended, fourteen schools would be required, according to the calculations of Mr. Reichelen. The number of pupils, however, in charge of a single master, is greater than that just stated, thereby impairing essentially the efficiency of the schools.

The masters receive fixed salaries,* the fees which they collect, being paid over to the school committee. Of the two schools of this kind at Berlin, which I visited, one came up to the requirements of the law in the branches of instruction, except in the omission of linear drawing. In the other, both drawing and natural history were omitted. In the first, the branches were: 1. Religious instruction. 2. Reading. 3. German language. 4. The geography and history of Prussia. 5. Arithmetic. 6. Elements of geometry. 7. Weights and measures of the country. 8. Natural history. 9. Writing. 10. Singing. In none of these schools is the physical education of the pupils attended to. In each there is a girls' school, separated from that of the boys, and giving similar instruction, except that a portion of the time is occupied in works appropriate to the sex.

According to rule, these schools should have two classes for each sex, the head master teaching the first, and the assistant the second; in one, however, the two classes were sub-divided, forming four. The lowest class learns to read and write a little, and is then promoted. In the school of two classes, the lower contained pupils from six to nine, and even ten years of age, and the upper class pupils from eight and nine to twelve and thirteen years. This division requires the union in one class of pupils in very different stages of progress, and renders simultaneous teaching almost out of the question. The lower class has twenty-six, and the upper thirty-two to thirty-four hours of instruction per week, the former having one hour less per day than the latter, which is a good arrangement. There is a short interval of recess in the morning exercises. 1. The religious instruction consists, in all the schools, of Bible history, catechism, and reading the Bible.. The schools are for Protestants, and the Lutheran catechism is used. 2. The reading is taught by the phonic method. In many schools, the reading board and letter blocks are used; in one of those which I visited, writing was taught with reading. Exercises of thought and speech are interwoved with the elements of reading. The reading books are various, and combine progressive instruction in this branch with incidental information in morals, the history of the country, history of the church and of sects, biography, geography, natural history and elementary physics, grammar, &c. This incidental method is however, far from giving sufficient instruction, unless combined with the direct, though, by keeping it in view, the exercises in reading are prevented from degenerating into mere lessons of sounds. From the books which are allowed by the highest school authorities to be used, the committee of any particular school, after consulting the master, adopt such as they please, and when the teacher wishes a change, he applies to the same authority. The list of approved books is always sufficiently large to admit of the exercise of the individual judgments of the master and committee. The analysis of words and sentences is attended to in these schools, and exercises of induction are practiced, especially where younger masters from the teachers' seminaries are employed. As the method of teaching depends principally upon the master, it sometimes varies, even in the same school. If the precise routine were laid down, the spirit would be different, and thus, at last, it is the kind of education given to the teacher which determines the character of the school. It may be stated, however, that the instruction is either simultaneous or individual. 3. The German requires no special remark; it includes instruction in grammar. 4. The geography is taught by beginning with an outline of general geography, referring to maps, and learning from books. There is a great deficiency in the implements for teaching this branch. 5. Both mental and written arithmetic are taught. In one of the schools, the ground work is laid according to Pestalozzi's method, and the extent of the course is to the single rule of three, inclusive. Some of the pupils acquire great facility in mental arithmetic. 6. The geometry consists of the elements of form, according to Pestalozzi. 7. The weights and measures are taught as in our schools, by committing tables to memory, and not, as in Holland, by actual reference to the standards themselves. 8. The writing is taught by copying from ordinary copy boards, first on the slate, and then on paper. The blackboard is used in some cases. Writing from dictation is resorted to for orthography. The proficiency in this branch is, however, only tolerable. 9. Vocal music is taught by note, and particular attention is paid to church music. The school is begun and ended with a psalm or hymn, as well as with prayer.

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* The salary of the head master of both boys' and girls' schools, is two hundred and twenty-five dollars per annum, besides which he has his lodging and certain allowances, amounting to from seventy-five to a hundred and twelve dollars. The pupils pay at the minimum three, and at the maximum thirty cents per month. In one of the schools which I visited, the fees amounted in all to about nine dollars and seventy-five cents per month, the two-fifths of which, forming the master's perquisite, amounted therefore to about forty-seven dollars a year.

The ordinary discipline is conducted without corporeal punishment, though it is allowed in extreme cases. The individuals of the classes retain the same places, unless in cases of gross neglect, or as a kind of punishment. These places are in some schools, regulated in the upper classes by a writing lesson at the end of the month, in which correctness in spelling, as well as neatness of handwriting, are taken into the account.

In addition to the class of elementary schools above described, there are at Berlin many more, public and private, numbering in 1850, over twenty thousand pupils under the age of fourteen years. Many children of this age are also to be found in the burgher schools, as well as in the lower classes of the gymnasia and real schools. The burgher schools embrace a wide range of studies and methods of teaching, from which teachers and committees in our own country can derive many valuable hints. Although impressed with some general characteristics by the law, they differ according to the different circumstances of the population, whether in a large or a small village, or whether each is complete in its own course of study, or made preparatory in some of its classes, to entrance into a gymnasia or real school. There are upward of eighty schools of this grade, numbering over eight thousand pupils. We give descriptions of several of the most distinguished.

DOROTHEAN HIGHER CITY SCHOOL.

This is a burgher school of recent establishment, located in the Dorothean quarter of the town, from which the school takes its name. The pupils are admitted at six years of age, and may remain until sixteen, when they are prepared to enter a business life. If intended for a professional career, they pass from the second class to the third of a gymnasium or grammar school at about fourteen. At present, there is no first class, but this deficiency is to be supplied, and it is intended that a pupil of capacity, who has passed through its studies, shall be prepared for the second class of a gymnasium. In this case, private lessons in Greek must be taken, and I should judge that, when established, this class will be composed only of those who intend to finish their education here, so as to pass to a "real school," or to some "technical school." Many pupils are actually prepared here for entrance into the third class of a gymnasium, and the courses have been in part adapted to this purpose. The certificate of the first class of this school, as of others of its grade, gives the privilege of claiming but one year of military service, and qualifies for employments in the government bureaux, which, however, do not in general require a knowledge of Latin.

The school consists of about 200 pupils, arranged in five classes, of which the sixth and fifth, the lowest two, have courses of one year each, and the others of two years. There is a head master and four regular teachers, besides four assistants or special masters, who are employed during part of the school hours, or in teaching particular subjects. In the lower classes, each master teaches, in general, the whole round of subjects in which his class is occupied. In the upper classes, the teachers are confined to a few subjects. The arrangement of this matter is, however, at the discretion of the director or head master, who varies it as appears best for the interests of the school. In some of the classes, there is a special master for religious instruction, which, however, is not usual in Prussia.

The methods of instruction in this school are, in general, most excellent, and I was particularly struck with the small number of text-books employed. This is not peculiar, however, to this establishment, but is a feature in every good school in Germany. The master is expected to be so fully imbued with his subject, and expert in his art, as to be able to impart knowledge principally orally to his pupils, and in such a way as to adapt it to each individual; hence books are chiefly required for study at home, and individual training is possible to an extent which no routine system with books would permit.

The following statements give the course ofinstruction in detail:

RELIGIOUS INSTRUCTION.

Class VI. Stories from the Old Testament.
Class V. Stories from the New Testament.
Class IV. Bible History.
Class III. Reading and explanation of selections from the Scripture.
Class II. The evidences of Christianity.

The stories alluded to in the course of the sixth and fifth classes, are the most remarkable biographies of the Old and New Testaments. The stories are chiefly narrated by the teacher, frequently in the words used in the sacred volume; and in the fourth class, these same histories are read in the Bible itself. The narrations in the lower classes admit of various explanatory remarks and illustrations of the history, the natural history, and geography referred to. The subject of the narrative being thus familiar to the pupil, he is interested by the beautiful simplicity of the language of the Bible, which otherwise he might fail to perceive, since his attention would be engaged with the incidents about which he was reading, rather than with the style. The study of the Evidences of Christianity would, it seems to me, be more suitable to the age of the first than of the second class.

GERMAN LANGUAGE.

Class VI. Exercises of speech and thought (inductive exercises.) Preparatory exercises in reading by the phonic (lautir) method. Fluent reading of words and sentences.
Class V. The most important parts of etymology explained by reading lessons.
Class IV. Exercises of etymology. Reading from a text-book. Stories narrated for written exercises. Orthographical exercises.
Class III. Grammatical analysis of sentences.
Class II. The same continued. Original written exercises and descriptions.

The exercises of speech and thought are admirably conducted. In teaching to read, the letter-box and composition-board, are used. The lowest class is divided into two sections in receiving this instruction, so that each teacher has not more than twenty-five pupils under his charge. The reading exercises throughout the course, will be found included under the title of "German." Diesterweg's reading book for schools is used in the lower classes.

LATIN LANGUAGE.

Class IV. Regular verbs and other parts of speech. Translation of Gedicke's reading book.
Class III. Constructions varying from the German. More difficult parts of Gedicke's reading book. Cornelius Nepos.
Class II. Irregular parts of etymology. Syntax. Special reference to the differences from the German. Ovid.

Although the Latin is begun with the fourth class, it will be seen hereafter, that it occupies but a small portion of the time of each week, and as far as mental culture is concerned to those who leave off this study at fourteen, I can not say that observation indicated its utility. On the contrary, an imperfect knowledge is acquired, which can produce no good effect.

FRENCH LANGUAGE.

Class V. Exercises in reading and translating small sentences.
Class IV. Auxiliary and regular verbs. Exercises on simple sentences.
Class III. Irregular verbs and rules on the use of pronouns. Numa Pompilius begun.
Class II. More difficult parts of the French grammar. Numa Pompilius completed.

ARITHMETIC.

Class VI. The four ground rules, with numbers up to one thousand.
Class V. Denominate numbers, and preparatory exercises in fractions.
Class IV. Fractions.
Class III. Proportions, with their applications.
Class II. Elements of algebra, involution, and evolution.

GEOMETRY.

Class V. Regular figures, &c., from the elements of geometry.
Class IV. Lines, angles, and triangles.
Class III. Circles and Polygons. Mensuration of plane figures.
Class II. Similarity of figures, &c.

The geometry is here introduced earlier than in the seminary school, and, in general, the studies of the fifth class appear to me rather too much diversified for their age.

NATURAL HISTORY.

Class IV. Domestic animals.
Class III. Viviparous animals.
Class II. Birds and fishes, illustrated by a small collection.

Physics is also taught in the second class, so far as to give a knowledge of the general properties of bodies.

GEOGRAPHY.

Class V. Knowledge of home. The district. The province. The kingdom.
Class IV. General geography.
Class III. Principal countries of Europe.
Class II. Europe more in particular.

The knowledge of home includes an account of its history, its monuments, distinguished men, &c.

The course in geography follows the plan already described in the burgher school of Halle.

HISTORY.

Class IV. A general view of the more important historical events, with the study of particular ones in detail.
Class III. Ancient history.
Class II. Modern history, to the time of the reformation.

The general history is rather a series of biographical sketches than a regular narration of events, and serves well as an introduction to systematic historical studies.

WRITING.

Class VI. Preparatory exercises in the lower division. Letters and words in the upper.
Class V. Single letters and small sentences.
Class IV. Writing from copy slips.
Class III. Writing with special reference to orthography.

The elements of writing are taught according to Pestalozzi's method, the upper and lower limits of the letters being given by horizontal, and the slope by inclined lines.

DRAWING.*

Class VI. Preparatory exercises. Regular figures
Class V. Drawing of bodies in elevation.
Class IV. Solids bounded by plane figures and straight lines.
Class III. Solids bounded by plane figures and straight lines, with shadows.
Class II. Solids bounded by curved surfaces.

The method of instruction is that devised by Mr. P. Schmidt, which is described particularly in the account of the royal real school of Berlin, of which he is teacher.

SINGING is taught by ear in the two lower classes, and by note in the upper. The execution by the second class, which I heard, was excellent. They sing in parts and by note.

The following table shows the time devoted, in school, during the week by each class to the several subjects of instruction:

ARRANGEMENT OF THE BRANCHES OF INSTRUCTION AT THE DOROTHEAN HIGHER CITY SCHOOL.

SUBJECTS OF STUDY.	HOURS PER WEEK.					
	Second Class.	Third Class.	Fourth Class.	Fifth Class.	Sixth Class.	Totals.‖
Religious Instruction,	2	2	2	2	4	18
German Language,	4	3	5	8	10†	42
Latin,	5	6	4			30
French,	4	4	4	2		26
Arithmetic,	3	3	3	4	4	26
Geometry,	2	2	2	2		14
Natural History,	4‡	2	2			16
Geography,	2	2	2	1§		13
History,	2	2	2	1§		13
Writing,		2	2	4	4	16
Drawing,	2	2	2	2	2	16
Singing,	2	2	2	2	2	16
Total,	32	32	32	28	26	

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* The book embodying Schmidt's method of drawing, has been translated and published by E. P. Peabody, Boston.

† Six hours of the instruction called "German," are devoted in the sixth class to learning to read, and four to "Exercises of speech and thought."

‡ Two hours of this instruction is given to physics.

§ In the fifth class, geography and history are combined under the title of "Knowledge of home."

‖ This column is obtained by doubling the numbers in those classes of which the course is for two years, and adding the numbers for the other classes.

The three higher classes have, as shown by the table just given, six hours of recitation every day, except Wednesday and Saturday, which are half-holidays, and on which they have but four hours. The lowest class has but five hours for four days in the week, and three the other two. The increase of school hours in the upper classes, is manifestly a proper arrangement.

This distribution of time assigns to language, including German, Latin, and French, ninety-eight hours; to sciences and the kindred branches, namely, arithmetic, geometry, natural history, geography and history, eighty-two; to the branches which specially educate a part of the senses, while they have important applications in after-life, as writing, drawing, and singing, forty-eight hours, and to morals and religion, eighteen hours.

The burgher school connected with the teachers' seminary, recently established to educate teachers for the city schools, present several modifications of the above course, both in the order, and extent to which the studies are pursued.

SEMINARY SCHOOL OF BERLIN.

This is a burgher or middle school, founded in 1832, and attached to the Teachers' Seminary of Berlin,* taking its name from this connection. The school is for boys only, and, like other higher burgher schools, it serves to prepare for the third class of a gymnasium, as well as for entrance into active life. The same teachers give instruction in this school and in the seminary, being assisted here by the pupils of the seminary, to whom this serves as a school of practice. There are four regular teachers, besides the director, and also masters for drawing and singing.

The pupils are admitted as early as five and six years of age. The time of year for general admission is Easter. There are six classes in the school, the lower four of which each retain the pupil, if industrious and intelligent, a year, and the two upper, each two years. The whole course thus lasts eight years. Fifteen is, however, the usual age at which those who do not pass to the gymnasium leave the school. The average number of pupils in each class is thirty.†

Every month there is a private examination, in presence of all the teachers, at which the parents may attend. Every three months the pupil receives a note of progress and conduct, to be handed to his parents. Formerly a printed circular was sent, containing information in the form of an abstract from the account kept of recitations and conduct. It has been found, however, much more effectual to give a written statement of the character of the pupil, derived from the school journal, inasmuch as it insures more certainly the attention of parents. At Easter, a public examination is held, and those who have made a proper proficiency in their studies are passed to a higher class.

Arrangements exist by which those pupils whose parents desire it, may study under the superintendence of a teacher,‡ during the time considered necessary for the preparation of the lessons of their class. The following division of the studies of the school is made by the director.

1. RELIGIOUS INSTRUCTION.—Bible history. History of the Church and of the Reformation. Protestant Catechism.

2. LANGUAGES.—(*a*) German. Fluency in reading, and readiness in answering questions. Capability of writing an exercise upon an ordinary subject. Grammar of the language. (*b*) Latin. Orthography, etymology, and the elements of syntax. Translation of an easy Latin author (Cornelius Nepos) into German, or of an easy German author into Latin. (*c*) French. Knowledge of the Grammar. Facility in the translation of easy authors, and in writing compositions.

3. SCIENCES.—(*a*) Arithmetic. Mental and written. Positive and negative quantities. Involution and evolution. (*b*) Geometry. Plane geometry, with practical applications. (*c*) Natural History. Knowledge of the most important minerals and plants of the neighborhood. General

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* Of which Dr. Diesterweg is director.

† The school fees for the four lower classes are three dollars and seventy-five cents per quarter, and for the two higher classes four dollars and fifty cents per quarter, besides a charge of one dollar twelve and a half cents for fuel during the winter.

‡ The fee for private study is four dollars and fifty cents per quarter.

outline of zoology and anthropology. (*d*) Geography, physical and mathematical. (*e*) History. Outlines of universal history. History of the country.

4. Mechanical Acquirements.—(*a*) Reading. (*b*) A good handwriting. (*c*) Draughts of models, furniture, &c. (*d*) Singing.

It will be found, subsequently, that I have taken reading out of this class, and placed it beside the German language, to which it is subsidiary, and where it is classed in the preceding school.

In regard to the methods of carrying out this course, the following rules are laid down, and after carefully visiting the school, I can testify that they are fully observed. Indeed, this is one of the most interesting establishments which I saw, from the liveliness and activity which prevails in its classes.

The principle of induction is used, as far as practicable, in all branches; thus, in the earlier exercises, an object is presented to the pupil, who is led to notice its peculiarities, and to express his conceptions of them. He passes from objects which are known, and even familiar, to the unknown. Unknown objects are illustrated, if possible, by models, and the names of the parts are taught, and their uses or properties examined. The pupil proceeds first from particulars to generals. Subsequently, the order is reversed. He is made to understand whatever he is required to remember; to find out for himself, if possible, rather than to be taught directly.

Historical and similar subjects are taught by lecture, mingled with questions. The pupil is led to express himself readily and correctly; the teacher speaks no more, therefore, than is absolutely necessary for explanation, or to induce suitable answers. Self-exertion, on the part of the pupil, is constantly encouraged. He is taught to observe whatever is interesting. Imitation of what is seen, and repetition of what is heard, lead to original thought. This, however, is to be expected only from pupils of talent, and hence the teacher must be satisfied to allow some to learn what others have found out. The common mistakes of overburdening the mind with positive knowledge, and of too much system in teaching, are to be avoided, as both are injurious to mental development. The teacher must be able to make his subject interesting, and, therefore, should know how to communicate it without a book, and to elicit the knowledge of his pupil by proper questions. It is the mental activity of the pupil which will determine the measure of his success in after life; and hence this activity, rather than positive knowledge, should be looked to as the object of the instruction at school.

In regard to this last-named principle, although I consider it applicable, in a great degree, in elementary education, yet it appears to me that exception must be made of the cases of pupils who intend to enter active life on leaving the school, and to whom, therefore, the knowledge which they will have immediate occasion to use, should be imparted, to render their education effective. In general, where the mind may be cultivated by different studies, choice should be made of those most likely to be applied by the individual in his future career, especially if his education is necessarily to terminate before he can have time to master the complete circle.

Religious Instruction.

Class VI. Four hours per week. Narration by the teacher of stories from the Old Testament, in the words of the Bible, repeated by the pupils. Easy verses learned by heart.

Class V. Four hours. Stories from the gospels, except the latter portion of the Life of Christ. Church songs and Bible verses learned.

Class IV. Three hours. The Old Testament in a more connected form. The moral of the history is impressed upon the children. The Ten Commandments and church songs committed to memory.

Class III. Two hours. The life and doctrines of Christ, to the period of his imprisonment. Church history. Four weeks are set apart for learning the geography of Palestine.

Class II. Two hours. The Protestant catechism committed to memory and explained. Church songs and verses committed.

Class I. Two hours. A compendium of the history of the Christian Church, particularly after the apostolic age. History of the Reformation. Review of the Bible. Committing to memory psalms and hymns, continued.

German Language.

Class VI. Four hours. Exercises of speech. Stories narrated to the children and repeated by them. After learning to write, these stories are written upon the slate.

Class V. Four hours. Exercises in orthography. Etymology begun.

Class IV. Four hours. Exercises in orthography and style. Every week a short composition is written on some subject which has been narrated.

Class III. Grammar continued.
Class II. Four hours. Original compositions, which are corrected during the recitations. Syntax commenced.
Class I. Three hours. Compositions on historical subjects. Essays written at home, and corrected in the class-room. Syntax continued.

LATIN LANGUAGE.

Class IV. Three hours. Declensions of nouns, adjectives, and pronouns learned. Examples learned by heart, and others written as an exercise at home. Auxiliary verbs conjugated.
Class III. Four hours. Comparison of adjectives. Regular verbs conjugated.
Class II. Four hours. Irregular verbs. Syntax begun. Translation from Latin into German.
Class I. Six hours. Grammar continued. Written exercises at home and in the class. Every four weeks an extempore exercise is written, which the teachers correct out of school hours. Cornelius Nepos read and construed.

FRENCH LANGUAGE.

Class III. Three hours. Exercises in reading. Elements of grammar. Words learned by heart. Easy exercises written at home and in school hours.
Class II. Four hours. Regular and irregular verbs learned. Syntax. Translations from French into German. Words learned by rote.
Class I. Four hours. Written exercises of increased difficulty. Tables dictated and learned by heart. Voltaire's Charles XII. read.

ARITHMETIC.

Class VI. Four hours. Practical arithmetic. The fundamental operations taught with numbers from one to one hundred; first mentally, then with blocks, and afterward with figures. Exercises prepared at home twice a week.
Class V. Four hours. The four ground rules continued, with numbers as high as one thousand. Exercises in reading and writing large numbers. Mental arithmetic especially practiced. Addition and subtraction of abstract numbers.
Class IV. Four hours. Addition and subtraction revised. Multiplication and division of abstract numbers. Weights and measures explained.
Class III. Four hours. The four ground rules, with fractions.
Class II. Three hours. Revision of the above. Rule of three.
Class I. Three hours. In the first year practical arithmetic finished. Proportions and decimal fractions. Elements of algebra. Mental algebra.

GEOMETRY.

Class IV. Two hours. The essential preparatory exercises in form, in connection with drawing. Rudiments explained.
Class III. Two hours. Practice in the position of points, drawing of lines, angles, plane figures, representations of solids.
Class II. Two hours. Elements of geometry proper, the point, line, angles, triangles, and measures of straight lines, surfaces, and contents.
Class I. Two hours. Plane geometry completed, with practical exercises. Every alternate six months lessons in physics are given.

NATURAL HISTORY.

Class II. Two hours. In the summer term, study of certain classes of plants. In the winter term, of animals. The subject is illustrated by drawings.
Class I. Two hours. Systematic botany during the winter term, and zoology and mineralogy during the winter.

GEOGRAPHY.

Class III. Two hours. Knowledge of home. Berlin and its environs. Regency of Potsdam. Province of Brandenburgh. Necessary technical terms explained, as horizontal, vertical, &c.
Class II. Two hours. Geography of Prussia and Germany.
Class I. Two hours. General geography, particularly Europe and America. Asia more generally. Africa and Australia very briefly.

HISTORY.

Class II. Two hours. View of universal history, biographical rather than chronological.
Class I. Two hours. First year universal history completed. Second year the history of Germany, and particularly of Prussia. The most important inventions and discoveries are noticed in connection with the history of these countries.

READING.

Class VI. Seven hours. Reading by the phonic (lautir) method. Analysis of words in regard to division into syllables and sounds.
Class V. Seven hours. Mechanical reading continued, but with reference to the meaning of the words. The pupils are examined upon words, sentences, and paragraphs.
Class IV. Four hours. Explanatory reading continued. Accentuation. No piece is allowed to be read without its being understood.
Class III. Two hours. Rythmical reading begun. Interesting portions of the matter read, narrated by the pupils in their own words.
Class II. Two hours. Rythmical reading continued.
Class I. Two hours. Reading of some of the German classics. Analysis of the subject read.

Writing.

Class VI. Five hours. Introductory exercises of drawing upon the slate. Copying the small letters from the blackboard. Writing on paper. Capital letters. Written exercises at home twice a week.

Class V. Five hours. Writing of German characters continued. Roman letters begun. Copying from a book at home, with special reference to orthography.

Class IV. Four hours. Writing in German and Roman characters continued. Two hours copying from copy-slips. Two hours writing from dictation.

Class III. Three hours. Exercises of Class IV. continued. Pupils who write well are allowed to write without lines. Writing without copies, according to progress.

Class II. Two hours. Exercises continued. Most of the pupils write without lines, or by directing points merely.

Class I. The written exercises in other departments are examined, to ascertain the character of the handwriting. No special lessons are given.

Drawing.

Class IV. Two hours. Drawing straight lines in various directions and of various lengths. Making definite angles. Drawing triangles, squares, and other rectilinear figures.

Class III. Two hours. Drawing of circles and ovals.

Class II. Two hours. Drawing of bodies bounded by planes and straight lines in perspective. Drawing of curves.

Class I. Drawing from natural objects, from plaster casts, and models.

Singing.

Class IV. Two hours suffice to learn fifteen or twenty songs, of one or two verses, by note, and some ten choral songs.

Class III. Two hours. Songs with two parts continued. Chorals with one voice.

Class II. Two hours. Songs with two or three voices continued.

Class I. Two hours. Songs and chorals with three or four parts.

Once during the morning there is an interval for recreation in the court-yard of the school, and the pupils are directed in their exercises of marching and counter-marching, and the like, by one of the teachers.

The course marked out in the foregoing programme, as far as it extends, seems to me well adapted to educate the moral and intellectual faculties, as well as the senses; to give mental vigor, while it furnishes information useful to the pupil in after life.

There are peculiarities in regard to the religious instruction, even as intended for Protestants, which may be remarked in the fifth and third classes, the object of which I do not understand. In other respects, when sectarian instruction may be given, as in this school, where all the pupils are of one denomination, the course appears to be good. The manner of communicating the instruction by conversation and lectures, renders it very effective. There are in all the classes, taken together, twenty-two hours per week devoted to religious instruction here, and eighteen in the other, but the programme does not show a gain in the amount of knowledge communicated.

The course in the mother tongue is fully explained in the programme, and is well adapted to produce fluency and accuracy of expression in conversation and writing. Both this and the foregoing course extend, as they should, through all the classes.

The Latin language is introduced with a view to preparation for a gymnasium, in the nomenclature of natural history, the business of the chemist and druggist, and perhaps, to use the language of an accomplished teacher in one of the higher town schools, "because such always has been the custom." I would give the preference to the course of this school over that of the other, considering the time of twenty-seven hours devoted to it more appropriate than of thirty, as in the other.

The French. besides, combining with the German and Latin to give the due proportion of intellectual culture from language, is introductory to the courses in the real schools, which are parallel with the gymnasia, and prepare for the polytechnic or other special schools, as the latter do for the university. It is practically useful, too, to the shopkeeper and tradesman of the continent of Europe, and was, probably, formerly more so than at present. The Latin language is begun in the fourth class, or at about eight years of age, and the French language in the third class, but neither occupy more than three hours a week, until a year afterward. These languages occupy forty-seven hours per week, during the entire period through which they are taught.

Nothing can be better than the foundation laid for arithmetic. The pupils are engaged a year in practical arithmetic before they are introduced to a knowledge of abstract numbers. Habits of thought are given by simple exercises in mental arithmetic. The eye is enlisted to aid the mind by computing with cubes, according to the method in the schools of Holland. Written arithmetic relieves the mental exertion, aids the memory, and trains the hand. The course is then carried on, combining mental and written arithmetic, and reaching algebra, which is also, in part, taught mentally.

The course of geometry begins with ideas of form, in connection with drawing, according to Pestalozzi's method, which it follows in general. It is thus a powerful means of stimulating the mind, and, though the time occupied is greater than if the subject were taught in the ordinary way, the results are much more satisfactory. If there is latent mathematical talent in a pupil, his powers of invention cannot fail to be drawn out by this method.

Natural history is not left to incidental instruction, to be derived from the reading-book, but is directly taught in the last two years. I had not the opportunity of judging of the fruits of this instruction in the seminary school itself, but the pupils of the seminary were pursuing the subject with zeal. In comparing this course with that of the other school, I think it preferable, except in the omission, at the beginning, of an account of the domestic animals. There will be, I doubt not, great improvements in teaching this branch at a future day. At present, the plan is hardly formed, and the collections for illustration, where they exist at all, are, in general, quite small. There is, besides, a tendency to make the course too strictly scientific.

The system of instruction in geography is begun in the third class, or at nine years of age, with a description of home. History, which in its elements is combined with geography, takes a separate place in the second class. The practice of giving biographical sketches instead of mere chronological details, cannot be too much commended. The pupil learns with interest the events of the lives of men who have made an impression upon the age in which they lived; these events form an outline which is easily fixed in the mind, and may subsequently be filled up in detail. Again, the discussions of inventions and discoveries in art or science afford relief from the descriptions of battles and revolutions, and serve to show the influence of genius exerted in civil life.

The phonic method of teaching to read, wants only the use of words having a meaning, as in Mr. Wood's system, to be nearly perfect. No reading is allowed, however, without understanding not only the words, but their connection, and the ideas conveyed by the sentences. The habit of thus giving paraphrases of subjects, leads to facility of expression, and by combining this with copying from good models, a correct style is formed. The course of reading of the highest class, includes selections from the German classics. Introductory exercises in drawing precede the instruction in writing; these might, I have no doubt, be much further extended with advantage.* A good handwriting is produced by the succession of exercises described in the programme. The course of drawing, which is commenced as a distinct branch in the fourth class, is intended to enable the pupil to sketch correctly, and with facility, such objects of furniture, machinery, &c., as he may have occasion to represent in his occupations in after life. The addition of two hours of drawing in the fifth class, would seem to me not to overburden the class with work, while it would add materially to their proficiency in this useful branch.

Singing is successfully taught, and by note. It is considered an indispensable branch of instruction, and all my convictions are in its favor, whether as a means of developing moral sentiment, or of physical education. Singing by ear might, however, very well begin in the lower classes, and for this purpose the number of hours of instruction per week might be increased from twenty-four to twenty-six in the lowest, and twenty-eight in the fifth class.

The time allotted to the different studies will appear better by the annexed table. In regard to the ages of the pupils, inserted in the heading of the columns, it is to be understood that they are those of intelligent and industrious boys entering at six years, and going regularly through the classes. The subjects of instruction are placed in the first column, the number of hours per week occupied by the several classes in the following ones, and the total number of. hours devoted to each subject, while in the school, in the last column. In forming this total. the number of hours occupied by the four lower classes, the course in each of which is of one year, is reckoned once; and the number of hours of the two upper classes, each course occupying two years, is doubled.

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* As has been done for the elements of an English hand, by our countryman, Mr. Rembrandt Peale, in his admirable system of graphics. The forms of the German letters would require a different system.

Table of distribution of time in the Royal Seminary School of Berlin.

SUBJECTS OF INSTRUCTION.	NUMBER OF HOURS PER WEEK.						
	First Class, 12 yrs. 13 yrs.	Second Class, 10 yrs. 11 yrs.	Third Class, 9 years of age.	Fourth Class, 8 years of age.	Fifth Class, 7 years of age.	Sixth Class, 6 years of age.	Totals.
Religious Instruction	2	2	3	3	4	4	22
German Language	3	3	4	4	4	3	27
Reading	2	2	3	5	8	7	31
Latin Language	6	4	4	3			27
French Language	4	4	4				20
Arithmetic	3	3	3	4	4*	5	28
Geometry	2	2	2				10
Natural History	2	2					8
Geography	2	2	2				10
History	2	2					8
Writing		2	3	3	4	5	19
Drawing	2	2	2	2			12
Singing	2	2	2	2			12
	32	32	32	26	24	24	

From this table it appears that language occupies one hundred and five hours, estimating the time devoted to reading with that for German, Latin, and French, science sixty-four hours, and the mechanical branches, including writing, drawing, and singing, forty-three. It would be erroneous, however, to suppose that the results are in these proportions. The least consideration will show that the progress in different branches in the same school cannot be estimated by the time devoted to them; the intrinsic difficulties of acquisition, the different periods of the course at which they are introduced, and various other causes, prevent comparisons of this sort. Not only so, but the time occupied in the same subjects in different schools, which might be thought to afford an accurate test of comparative progress in them, can not, in reality, be employed for this purpose, without at the same time carefully studying the programmes, to ascertain how the time is applied in each class, and the manner in which it is distributed among the several classes. The two higher city schools just described, afford conclusive evidence of this fact. There can be no doubt, I think, that the Dorothean school is the stronger in language, and the seminary school in science. Such is the general reputation of the two, and such is the tone which the director of each would be likely to give to the school under his charge. The impression which I derived from visiting the two establishments was to the same effect. The number of hours per week devoted to language in all the classes of the two schools is, however, ninety-eight for the first, and one hundred and five for the second, and to science, eighty-two for the former and sixty-four for the latter; leading, in both cases, to the reverse of the conclusion just stated. If differences in the arrangement of studies, in the power of the teachers, in the methods and implements of instruction, and even in the pupils themselves, may lead to such results, small differences in the proportion of time allotted to different branches should not, without carefully checking their results by other comparisons, be assumed to indicate corresponding differences in the value of the courses.

In following the course of studies of these two schools, it will be seen that those of the lowest class, in each, are almost identical. In the next, the seminary school has greatly the advantage in the compactness of arrangement, by which the attention of the pupil is confined to fewer subjects. No less than ten branches are introduced into the programme of this class in the Dorothean school, while there are but five in the seminary school. The scientific branches, except those which run through all the years, are introduced later in the latter school, which is in accordance with the principle of concentrating the attention on a few subjects, where it is possible. It appears to me that, in general, it is not proper to introduce these branches early, except as matters of incidental instruction. The separation of the programmes of the two schools, produced as just stated, renders it difficult briefly to compare the courses of the same class in each. A general comparison of the subjects shows that the German language is taught according to the same plan in each, and that the highest class attains the same level in each, as far as the grammar is concerned; much more attention, however, is paid in the seminary school to the reading courses, as well for the acquisition of reading as an art, and to cultivate a taste for it, as for the incidental knowledge to be communicated. Nearly one fourth of the pupil's time, in the school just named, is devoted to the vernacular. The Latin is begun in the same class in both schools, but the course in the Dorothean school at once takes the lead of the other, and keeps it throughout. The French begins in the fifth class in one school, and in the third in the other; and, though the programmes terminate at about the same point, there is a greater proficiency made in the Dorothean school. One object, if not the principal one, of learning this language being to speak it, the early commencement is an advantage. In a general comparison of progress in language, the Dorothean school, as already stated, ranks higher than the other.

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* This includes preparatory geometrical exercises.

The courses of arithmetic are different, but terminate at the same level; I have already mentioned my preference for the course of the seminary. Geometry is begun in the fifth class in the Dorothean, and in the fourth in the seminary school; the courses go on together for three classes, and extend further in the latter institution. The differences in the courses of natural history have already been the subject of remark. The course of geography is essentially the same, differing only in the age of the pupil at beginning. History is begun in the fourth class of the Dorothean, and in the second in the seminary school; it is more systematic in the former, and assumes more the form of biography in the latter; the range of the two courses does not differ essentially. Taking these branches, classed as scientific, together, the superiority is with the seminary school, and thus, in both this and the former case, the judgment which would have been pronounced by referring to the numbers merely, is reversed.

SEMINARY SCHOOL AT WEISSENFELS.

The Dorothean and Seminary school are described by Dr. Bache as characteristic specimens of the higher burgher school of Prussia. In the same connection he introduces the two following schools, the Seminary school at Weissenfels as representing, not a burgher school as it is denominated, but as covering the ground of a well organized elementary school for a village, and the higher burgher school of Potsdam, as carrying elementary instruction into the domain of secondary education.

This is a higher elementary, or lower burgher school, attached to the seminary for teachers at Weissenfels, and is under the charge of the director of the seminary. The school is intended not only for the benefit of the citizens of Weissenfels, but also as a model school, in which the pupils of the seminary may reduce to practice, under the eye of their teachers, the lessons of theory in the art of teaching, which forms an important part of the course of the seminary.

The school has four hundred pupils, male and female. They are divided into five classes, in the three lower of which the two sexes receive instruction in common, being separated in the highest. Each class averages thus eighty under the charge of one master, who is, however, assisted by the pupils of the seminary.

The following table shows the subjects of instruction, and the amount of time devoted to each. The whole course usually lasts seven years, when the pupil enters at the age of six or seven.

TABLE OF THE DISTRIBUTION OF TIME IN THE SEMINARY SCHOOL AT WEISSENFELS.

	NUMBER OF HOURS PER WEEK.				
SUBJECTS OF INSTRUCTION.	Boys' Class.	First Class.	Second Class.	Third Class.	Total.[*]
Religious Instruction,	6	5	4	4	34
German Language,	4	3	3	1	21
Reading,	2	4		3[†]	25
Inductive Exercises,				1	1
Arithmetic,	4	4	4	4	28
Geometry,	3				6
Geography, History, Natural History, &c.,	3	2	3	1	17
Writing,	3	4	4	8[‡]	30
Drawing,	2	2	1	1	11
Singing,	3	2	2	3	17
Total,	30	26	26	26	

The ***religious instruction*** consists in the narration of Bible stories, and in pointing out the appropriate moral; in Bible history in a more connected form; in learning Luther's catechism, and committing parts of the Bible to memory. The pupils are also expected to give an account of the Sunday's sermon. The study of ***German*** includes the grammar. There are exercises specially of orthography and syntax in the upper classes. Poetry is also committed to memory.

The elements or ***reading and writing*** are taught together according to Dr. Harnisch's method.[§] In the upper classes, the reading lessons are intended not only to give fluency in the art of reading, but also incidental instruction in grammar and general knowledge.

Direct exercises of ***induction*** are in use only in the lowest class.

The instruction in ***arithmetic***, extends through fractions; mental arithmetic preceding written through all the rules. That of ***geometry***, consists merely of the elements of form, according to Pestalozzi.

Under ***geography*** and ***history*** are included both physical and political geography and biography. With the physical geography is interwoven an account of the productions of nature and art of different countries. In the summer, the pupils are made acquainted with the botany of the environs, and in winter receive lessons upon animals, &c.

Writing on paper is a matter of privilege attainable by those who improve sufficiently. The others write on slates. The first lessons in drawing are introductory to writing; afterwards it is made a separate branch.

The higher classes learn ***music*** by note, and sing twice a week in company with the pupils of the normal school. The violin is used in leading the class singing exercises.

The discipline and instruction are admirable. The teachers have little occasion to use punishment. The instruction is chiefly given ***viva voce***, and the pupils in general appear interested in their studies. A book is kept for the record of delinquences, which is examined by one of the superior masters once a week, and notice taken of the faults recorded. The director examines it once a month, and admonishes those who need it. Corporal punishment is resorted to only in extreme cases.

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[*] This column is calculated on the supposition that the pupil remains in the school from six until thirteen years of age, passing through the lowest class in one year, and each of the others in two years.

[†] As the instruction in writing and reading is combined, I have placed half of the number of hours under each head.

[‡] Of these eight hours, three are combined, reading and writing, and two copying.

[§] See page 200.

The two schools first described, will be found to vary very considerably in their arrangements from this one, forming the opposite extreme as it were, of the class, but a connecting link will be supplied by the burgher school of Potsdam, which is intended to cover the ground occupied by both divisions.

HIGHER BURGHER SCHOOL OF POTSDAM.

This school differs from those already described in several particulars, exemplifying, in its arrangements, the division into lower and higher burgher schools, and carrying the courses of the latter decidedly into the domain of secondary instruction. Its principal objects are to prepare children of both sexes for occupations connected with, or corresponding to, the lower trades, and boys for the higher mechanical occupations, as builders, architects, &c., or for admission into the trade school connected with the government, mechanics', or trade institute at Berlin, and for the gymnasium. This school thus supplies instruction of different grades; first, elementary instruction of a higher kind; second, that usually given in the "real schools" of Prussia, and third, that necessary for entrance into the higher classes of a gymnasium, or grammar school. Hence its studies embrace many subjects and stages of progress which properly belong to secondary instruction, and even to a greater degree than other higher burgher schools.

The pupils pursue a course common to all in the three lower classes, or from about six to eleven or twelve years of age, when a separation takes place. Those who are to leave school at thirteen or fourteen, pass into the "middle burgher school class," in which the study of Latin and French is dropped, and the time is devoted to religious instruction, German, mathematics, geography and history, the elements of natural history, technology and physics, writing, drawing, and vocal music. Those pupils who are preparing for a higher class of a gymnasium, or who intend to pursue the entire course here, pass from the third class to the "second burgher school class." These arrangements appear to meet the wants of the citizens of Potsdam, for, in 1837, forty-two pupils passed from the third class to the middle burgher school class, and forty-one to the second class of the higher school.

Pupils preparing for the sixth class of a gymnasium leave this school in the "second elementary class," or at about nine or ten years of age, and those who aim at the third class of a gymnasium, usually pass from this at the close of the course of the second class in the higher school. The first, or upper class, thus contain only those pupils who intend to enter into active business life on leaving the school, or to enter a special school of arts and trades. On this account, the branches of science which are immediately applicable to such objects, are introduced into the course. This class consisted, in 1837, of ten pupils. The complete course is usually gone through at or before sixteen years of age, and entitles the pupil to claim one year of voluntary military service, instead of the three regular years, and qualifies him for appointment in the government bureaux.

The six boys' and three girls' classes have twelve ordinary teachers, besides one assistant, and two female teachers. Each of the lower classes has but one teacher, who attends to all the subjects as in the other schools already described. The total number of pupils was, in 1837, four hundred and fifty-six, of whom three hundred and twenty-three were boys.

The usual system of change of place in the classes is employed to excite emulation, and discipline is mainly conducted by means of a black-book in which a pupil's name is entered at the end of the week or month, when he has had a certain number of faults per week, or per month, marked against him by the teacher. Marks of merit are allowed to cancel those of demerit. The entry is communicated to the pupil's comrades, and also to his parents. As far as I have been able to judge of these and similar systems of discipline in day schools, I have not found any marked good effects from them. If a teacher is competent, he keeps up good discipline without them, and if he is not, they are of little or no service to him. In this remark I do not mean to include communications to parents, which are frequently of the greatest utility. The following plan, which apparently bears some analogy to this, but which owes its efficacy to a different principle, is in successful operation in Dr. Mayo's excellent boarding school at Cheam, in Surrey, England. When a pupil proves insensible to the admonitions of the teacher, and is frequently reported for offenses or negligence, he is required to show to the principal a written statement of character from each master after every hour. He is thus subjected to admonition or other punishment from the principal immediately after committing an offense. For this very strict supervision, one extending over a day or week is substituted when improvement manifests itself, or when the case does not require so great severity.

I propose now to give a statement of the courses of the burgher school at Potsdam, and of the time required for their completion, with remarks and comparisons with the schools already described.

The annexed plan of the distribution of time gives also a list of the subjects of instruction: it is arranged exactly like the similar ones already presented. The first two columns of figures on the left hand refer to the number of hours of study per week in the two classes of the higher school. The third contains those of the middle burgher school class, the pupils in which terminate their course here. The next three contain the hours of study of the elementary classes, which are common to the whole school.

TABLE OF THE DISTRIBUTION OF TIME OF THE HIGHER BURGHER SCHOOL OF POTSDAM.

SUBJECTS OF INSTRUCTION.	First or Upper Burgher School Class. 14 and 15 years of age.	Second Burgher School Class. 12 and 13 years of age.	Middle Burgher School or Upper Class. 12 and 13 years of age.	First Elementary Class. 10 and 11 years of age.	Second Elementary Class. 8 and 9 years of age.	Third Elementary Class. 6 and 7 years of age.	Totals.‖
Religious Instruction,	2	2	2	3	3	2	24
German Language,	3	3	6	5*	5*	6†	44
Reading,			3	3	4	6	26
Latin,	6	6		4	4		40
French,	4	4	4	2	1		22
Arithmetic,	3	3	2	4	4	4	36
Geometry,	2	2	2	1‡	2§	2§	18
Natural History,		2	2	2	2	2	16
Geography,	2	2	2	2	1		14
History,	2	2	2	1			10
Technology,	2						4
Physics,	2	2	2				8
Chemistry,	4						8
Writing,	2	2	3	3	3	4	28
Drawing,	2	2	2	2			12
Singing,	2	2	2	2	2	2	20
	38	34	34	34	31	28	

Besides the branches taught in the burgher schools already described, we have in this one technology, physics, and chemistry, and the number of hours attached to them in the foregoing table shows that they are actually taught to a considerable extent. These subjects are introduced, and at the same time the amount of study in the languages is increased, requiring an undue degree of labor of the classes, and dividing their attention among too many subjects. Thirty-eight hours of attendance on school per week is certainly too much to require.

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* Includes orthography, 2 hours; grammar, 2 hours; exercises of style, 1 hour.

† Includes exercises of memory, 2 hours.

‡ Preparatory exercises.

§ Elements of form.

‖ The column of totals refers to the regular progression of five classes, and is obtained by doubling the numbers here given for the three elementary and two upper burgher school classes.

Latin is begun in the second elementary class, where the first rudiments of grammar are learned, and easy sentences translated. This course is continued in the next class. Those who intend to leave the school in the middle burgher school class, may be excused from attending the Latin lessons in the first.

The second class of the higher school read Cornelius Nepos, and the first Cæsar and Ovid. Their proficiency did not, however, seem to me to correspond at all with the number of hours devoted to this branch, viz., forty. The object of this instruction, for those who do not go to the gymnasium, is stated to be to enable them to pursue the science necessary to their callings, without embarrassment from the terms. I am of opinion that, in such a case, the system pursued in Mr. Wood's school, applied to learning the etymology of compound Latin words, and of the German words derived from the Latin, would answer the end better, with a less consumption of time; and if Latin is to be retained, the number of hours devoted to it in the Dorothean school, (thirty) or in the seminary school, (twenty-seven) seem much better suited to the object in view. I am induced to what may seem a tedious discussion of these programmes, because they afford different examples of primary instruction, the grade with which our college must begin, and we can not examine too carefully the subjects which should compose it, nor draw too largely upon experience in the details of arrangement.

French. This course does not differ materially from those already given. Telemachus is used as a text-book. The time appropriated to the language appears sufficient, without being burthensome. Both the Latin and French being commenced in the second elementary class, which contains pupils who intend to leave school at the end of the "middle burgher school class year," it may be supposed that this time is thrown away, as very little proficiency can be made in so short a period; the force of this objection is, however, somewhat diminished by the fact, that the arrangement gives an opportunity for the development of a disposition for language which may warrant a change in the destination of the pupil.

In *arithmetic*, the lowest class is employed mainly in the mental exercises. After they have learned to make figures, they prepare written examples at home. In the next class, written arithmetic is combined with mental. The four ground rules are learned with abstract and concrete numbers. Preparatory exercises in fractions are taught. The first elementary class proceed as far as to include fractions, and a part of the class study proportions. The middle burgher school class pass on to decimal fractions and the square and cube root. The second burgher school class have their attention in these same parts of arithmetic directed to the technical applications, and besides, begin algebra, and proceed as far as simple equations. The first burgher school class extend their course of algebra through equations of the second and third degrees, progressions, and logarithms. Mercantile arithmetic also forms part of their course. These latter subjects, however, can in nowise be considered as belonging to primary instruction.

Geometry. Preparatory exercises of form, after the method of Pestalozzi, are taught in the elementary classes, and the higher ones proceed through the elements of geometry, and include mensuration and plane trigonometry. The head master has arranged, for the benefit of his pupils, a course containing the most important elements, and teaches also by lectures, which the pupils are required to write out. The time allotted to this subject is nearly double that of the seminary school, and I saw some reason to doubt the propriety of beginning the elementary exercises so early.

Knowledge of nature and art. The introduction to this subject, taught in the lowest two classes, is drawn from natural history, physical geography, and physics, and is made the means of inductive exercise. The recitations and conversation lectures which I heard, evidently interested the pupils, while they cultivated habits of reflection and observation. They are parallel with the lessons on objects of the English schools, being, however, more extended. The more systematic course of natural history of the higher classes, is like that of the seminary school. In summer the pupils make occasional excursions into the country, for practical exercise in this branch, under charge of a teacher; these excursions, if rightly improved, may be made also the means of cultivating proper relations between the pupil and teacher, but they are liable to abuse, and should be carefully attended to, in order to prevent such results. This school possesses a good collection of plates of natural history,[*] and has the use of the museum of the trade school, which is under its roof.

The course of *technology*, intended to give a knowledge of the principal arts and their processes, lies open to the objection already urged, on the score of overburthening the pupils with work. Such knowledge, as well as that of physics and chemistry, would be of service in after-life, but I do not see the possibility of teaching it, except in a mere outline, in a short course, and the time allotted appears to contemplate something more.

Geography. This course is begun with physical geography. The natural and artificial divisions of the world follow. Then the physical and political geography of Europe is taken up. The course of the upper or middle burgher school class terminates with that of Germany, and especially of the Mark of Brandenburgh, and with a review of the whole. The second burgher school class has the same course with the middle class. The first takes up mathematical geography, and reviews physical geography more minutely, adding a knowledge of the climate, productions, commerce, manufactures, &c., of the countries studied. Maps are drawn, as an exercise, at home. This geographical course, which attaches every other part of the information to physical geography, appeared to me next in its success to the inductive plan already described. It is much facilitated by the use of raised maps, on which the natural features of the country strike the eye more forcible than on a common map, where, if the physical details are given, the names and positions of the places, the boundaries, &c., are obscured by them.

The course of *history*, in the lower classes, is like that in the other schools. In the middle class the subject is reviewed, and the history of Germany, and especially that of Prussia, and of the Mark of Brandenburgh is studied. The second higher burgher school class is taught an outline of ancient history, of that of the middle ages, and of later times, and then proceeds to the history of Germany and of Brandenburgh. In the first class, the history of Germany, and of modern Europe in general, is continued.

In the *mechanical branches*, the distribution of time agrees with that in the other schools, except in the number of hours allotted to writing, which is here twenty-eight, and in the Dorothean school but sixteen. *Vocal music* is taught by ear in the lower classes, and by note in the upper.

Physical education. There is an interval of a quarter of an hour in the middle of the morning, during which the pupils are free to take exercise, but there is no regular gymnastic or other exercise under the superintendence of the teachers.

It is obvious from what has been presented, that the elementary instruction requires raising to a higher level than at present, namely, to that of which an example has been given in the higher elementary school of Weissenfels. That then all pupils whose circumstances permit them to devote a longer time to education should pass to other schools, of a kind depending upon their destination in after-life, as determined by the circumstances of their parents and their own talents. The tone of these higher schools would, it appears, require to be varied according to the wants of the population among which they are placed, whether that of the country, of small towns, or of cities. In the cities, it has been seen that one class of burgher schools required is provided, and others will be described belonging more properly to a higher grade of instruction, upon the province of which, however, these latter decidedly trench. An example of a systematic arrangement appropriate to a city is afforded by the burgher school of Leipsic, presently to be described. Such a plan would, however, be inappropriate to a small town, where, of necessity, several schools must be united in one. In this case, it would require care to avoid the union of incompatible classes of pupils, causing mutual losses of time, and giving rise to defective habits of study. The same teachers should give instruction in the different departments of the school, in the same or kindred subjects, rather than to unite different classes. The pupil preparing for the gymnasium should not be called upon to study the natural sciences or mathematics which he will pursue there, and of which he does not feel the want for admission, nor the student who is to enter an architectural, commercial, or trade school, the classics which the gymnasial student requires for his admission.

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[*] By Fisher of Breslaw.

IV. THE REAL SCHOOLS OF GERMANY.

[Translated from the German of Karl von Raumer for this Journal.]

DURING the seventeenth century, pedagogical realism gained more and more ground in the schools of learning, as is shown by the introduction of the school-books of Comenius. These were brought into the gymnasium at Hersfield, in 1649. In the Dantzic Gymnasium, according to the plan of study for 1653, the *Vestibulum* and *Janua* of Comenius were to be read; in those of Stargard and Nuremberg, the *Orbis Pictus.*

In the use of these books, however, the thing sought for appears to have been a *copia vocabulorum*, with especial regard to the speaking of Latin. The pictures were used rather as a mnemonic help for fixing the words in the memory, than according to the idea of Comenius, as means of becoming acquainted with the things themselves.

The things, however, imperceptibly asserted their proper place. Feuerlein remarks, that complaint had been made of the want of a good vocabulary or *nomenclator;* and about the *Orbis Sensualium* of Comenius, which up to that time had been almost the only work of the kind. This contained the Latin of tailors, weavers, shoemakers, cooks, and butlers, unlatin phrases and barbarisms; and, on the other hand, lacked the most necessary words, particles, &c.* The *Libellus memorialis* of Cellarius was introduced in the place of the *Orbis Pictus*, to remedy this defect. But this school-book, which was of printed matter only, gave no better satisfaction; men had become used to the pictures of Comenius, and to his world of real things. Thus, Feuerlein says: "men might set about some wood-cuts or copper-plates, in which the several things which youth were learning might at least be placed *in effigie* before their eyes, and under each, what they are, or for what they are used, might be written; of which they might memorize the Latin names, and thus might fix words in their memories in relation to which they did not know what the thing is, or what the word means. * * * Besides, it would not be a bad plan," he continues, "to take some of the boys, from time to time, upon walks into the fields and gardens, to forges, saw mills, paper mills, &c., or to workshops of all kinds; to show them the tools, and tell them what are their names, and what is done with them; and then to ask them what are the Latin names of this or that, which they see *in substantia* before their eyes; or to tell them to them. This would not only impress the words much better upon their memories, while they would not otherwise learn them without vexation, since they do not understand them in German, or know what the thing is; but also this knowledge would serve a good turn in every-day life; in which the educated man often appears so ignorant and ill-informed upon subjects which are always coming up in ordinary conversation."

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* Feuerlein relates that when a scholar asked Conrector Manner, "Master, what is the Latin for Kugel-Höpflein?" (a sort of cake.) he answered, "You fool, do you suppose that Cicero ever ate a Kugel-Höpflein?" That is, where is the use of learning Latin words which do not appear in the classics?

Something of life was beginning to make itself felt all through the schools.

Although the *Orbis Pictus* was disused in the Nuremberg Gymnasium, the Vestibulum of Comenius was yet retained there in the two lowest classes. In the same direction was tending most of the realist instruction in mathematics, which is called, in the plan of study given by Feuerlein, *mathesis juvenilis*, and which passed through five classes. Sturm's class-book,* which was used for this purpose, is largely furnished with copper-plates, and includes general mathematics, practical arithmetic, theoretical and practical geometry, (field surveying, measuring altitudes, and stereometry,) optics, military and civil architecture, cosmography, chronology, dialing, mechanics, and, last of all, chiromancy! The elements of these studies are contained upon seventy-nine folio pages. Feuerlein praises highly Sturm's mathematical method; one would think one was listening to a scholar of Pestalozzi. "In it," he says, "there is no learning by rote of the one-times-one, as is customary in the German schools, without understanding it; but they learn themselves to make it, and to fix their understanding on it with reason and good apprehension of it. Here is learned the διότι, the basis of the rules, why they do so and so; in the German schools only the ὅτι is taught; how to proceed, without knowing the basis of the proceedings, the why. In the latter case the work would seem to be almost entirely one of memory, rather than of reason." He then goes on to praise it,—and this is what we have special regard to; that the boys "learn so skillfully to use the compasses, the square, the measuring-rod, &c., and that, after a few exercises, they learn, quickly and neatly, to estimate by the eye alone, the size of a table, a window, a room, a house, &c."

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* The title is: "*Johannis Christophori Sturmii mathesis compendiaria sive tyrocinia mathematica.*" I have before me the sixth edition in folio, Coburg, 1714; edited by Sturm's *son*, Leonhard Christoph Sturm.

According to Sturm's preface to his book, it was introduced into various German gymnasiums.

Pastor Semler, of Halle, went still one step further.* In 1739, he published an account called "*Upon the Mathematical, Mechanical, and Agricultural Real School in the city of Halle*, approved and reopened by the royal Prussian government of the Duchy of Magdeburg, and the Berlin royal society of sciences."†

So far as I know, this is the first time that the name and the idea of the *real* school appear. Besides religious instruction, according to Semler, youth are to be instructed in knowledge which is useful and entirely indispensable in every-day life; and, in particular, all visible things are to be shown to them, whether in nature or by means of all manner of pictures. "A description of Rome in a book," he says, "gives the faintest notion of the city; a more lively one is given by an oral description, from one who has lived long in Rome; the liveliness of this impression is increased by copper-plates, paintings, or models; but to see the city with one's own eyes gives a most perfect knowledge. His rule has been, for forty years, *Non scholæ sed vitæ discendum.* In *real* life is needed a knowledge of weight, size, of the use of circles and lines, of the almanac, astronomy, and geography. There is also needed: "Knowledge of some physical things, such as metals, minerals, common stones, and precious stones, woods, colors, drawings, farming, gardening, book-keeping, something of anatomy and regimen, the most necessary parts of police regulations, the history of the country, from the Halle Chronicle and other authors; the map of all Germany, and those of the Duchy of Magdeburg, and of the cities and towns lying about Halle, which will be the subject of conversation very often in daily life; for this sort of knowledge is much more important than to know in what part of the world are Dublin, Astrakhan, and Adrianople."

We have here not only an enumeration of most of the real subjects which were afterward taught in the real schools, but also the fundamental principle appears here which was the leading one of Rousseau and Pestalozzi; that, first of all, that must be learned which is required by the immediate present, by daily life.

Among the professors at Halle, Semler mentions Chr. Thomasius, Cellarius, Hofmann the physician, and the philosopher Wolf, as those who approved his principles. In 1706, he presented his school proposals to the government of Magdeburg, which entered into them with approval. The Berlin society of sciences, being applied to by that government upon the subject, answered on the 15th of December, 1706; that provided schools were established for the training up of state and church officers, it would be well for such boys as now attend only the German schools, "to be instructed in an actual mechanical school, so that their understandings and senses might be more developed; and especially that they might become acquainted with common materials and subjects, their value and price, with the common proportions of circles, lines, angles, and weight, as well as with different sizes and their measurement, with weighing, and upon opportunity with the simple microscope, for the better understanding of the constituents of bodies; and with the use of other useful instruments, together with tools and levers; to the end that this knowledge might serve them for improved understanding and practices, and to the invention of new and useful modes of using them. Thus it can be seen that there would be attained by such scholars, good proportions in their work, a steady hand, and the like advantages, such as are derived from a more intelligent use of the outward senses, which are the foundation of all the skill which nature can offer and practice can perfect."

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* Christoph Semler, a Lutheran preacher, was born in Halle, in 1669; read lectures there; in 1697 became a magistrate, in 1699 inspector of the poor schools; was principal deacon of the church of St. Ulrich, and member of the Berlin Academy of Sciences. He died in 1740 Jöcher says, "He was a man of great science in mechanics and mathematics."

† This appeared in the "*Halle Advertiser*," from which it was taken for the "*Acta Historica Ecclesiastica*," (1740, Vol. XIX., p. 198.)

Semler, now assisted by the city, caused twelve poor boys to be instructed in his house, by a "literary man, well experienced in mathematics, mechanics, and agriculture;" but his plan lasted only for a year and a half. In this course of instruction, "sixty-three single objects were displayed before their eyes," chiefly by models.* In 1738, these ocular demonstrations were resumed. These were placed before the scholars, says Semler, "to see, not exotic things and objects of curiosity, but only things daily necessary, and such as possess the most immediate utility in every day life. By this method, the schools, which have been verbal schools hitherto, will become real schools, since information will be given in them no more by means purely abstract, universal, and intellectual. The elementary information of little children should be given to them without books, from things themselves." Books should merely serve for repetition, and the ideas of things are to be adjoined to words. The schools, hitherto rooms of martyrdom, will, by the introduction of realities into them, become real pleasure rooms. Semler was seventy years old when he wrote these words. It would be an error to consider him, from what has above been said, an entirely earthly-minded materialist realist, as so many of his successors were. He did not desire to remain permanently in the realm of the material, but, as he says, "to ascend from the creature to the Creator;" and he prays for the gift of enlightened eyes, which may penetrate within the penetralia of the creature. In conclusion, the pious old man, with the Psalmist, praises the works of God. "Blessed is he," he says, "who knows them holily; and twice blessed, he who holily takes pleasure in them, and thanks him for them, from the bottom of his heart."*

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* Sometimes by very strange ones. Thus there was a machine "which demonstrated the true reason of the rise and fall of the tide."

It has been remarked that in Francké's school there were various real studies, as botany, turning, and the like. Should not Semler, brought into such close communion with Francké, as teacher in the University of Halle, and as preacher and instructor of the German schools, have had an influence upon the improvements in teaching in the Pædagogium and Orphan-house by his pedagogical realism? It is worthy of remark, that from Francké's school came Johann Julius Hecker, who, in 1747, established the first important real school in Berlin; as did his successor in the same school, Johann Elias Silberschlag.

In treating of the stronger and stronger growth of realism, a distinction of it must be made, into two kinds. On the one hand, real studies, before entirely suppressed by the study of language, began to be more correctly estimated, and attempts were made to introduce them into the learned schools. And, on the other hand, the conviction grew, that in these schools the instruction was proper for such boys as were intended for the learned professions, and only for such, and that all other scholars were obliged to learn, and that in a superficial manner, things which could be of no use to them in after life. It was clear that, for scholars not intending a life of study, real knowledge was far more valuable than a mere purposeless beginning with Latin. The answer of the Berlin academy in the matter of Semler shows as much. Rector Gesner, of Rotenburg, in 1720, wrote to the same effect: "The one class, who will not study, but will become tradesmen, merchants, or soldiers, must be instructed in writing, arithmetic, writing letters, geography, description of the world, and history. The other class may be trained for studying." Schöttgen, rector in Dresden, wrote, in 1742, a "*Humble proposal for the special class in public city schools.*" In these schools, he says, every one is arranged with a view to the learning of Latin, and children, "who are to remain without Latin," are entirely forgotten. They are forced to learn Donatus and the grammar, which are useless for them; and they do not study what would be useful to mechanics, artists, or merchants. Of what use will it be to such, to have learned *anthrax*, *colax*, &c.? State and country need, not only people who know Latin, but others also. For these reasons he advises to organize a special class for such. "My proposal," he says, with resignation, "is already rejected before it has been brought to light. But, if what there is in it is not yet ripe, we will wait until the time comes for it."

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* I have, up to this time, been unable to learn further particulars about Semler. Schulz, ("*Rhenish Gazette,*" March and April, 1842, p. 159,) speaks cursorily of "Semler's sad experiences at Halle."

Rector Henzky of Prenzlau, already mentioned, wrote, in 1751, a treatise "*That real schools can and must become common;*" and the learned and cautious Joh. Matthias Gesner expressed himself thus: "It is a common fault of most of our schools, that in them provision is made only for such as intend to become what are called learned men by profession; and thus a complete acquaintance with Latin is required of all young people, without any distinction. On the contrary, those things are for the most part neglected, which would be indispensable, or at least useful, in common civil life, in the arts and professions, at court and in war. * * * A well-organized gymnasium should, on the contrary, be so arranged that youth, of every extraction, age, character, and distinction, may find their account there, and be taught in them for the common good. Youth may be, with reference to their future life, divided into three classes. 1. Those who are to learn trades, arts, or to be merchants; 2. Those who are to seek their fortune at court or in war; and, 3. Those who are to remain students, and to go to the university."*

Thus many wise men demanded that regard should be had, not only exclusively and uniformly to the education of students, but also to that of children who were "to remain without Latin." But the question how to bring this to pass, was a difficult one to answer.

According to Gesner's view, each gymnasium must solve the problem of educating all these entirely different classes of children. But it is evident how difficult of solution it must have been; and how great was the danger, that the endeavor to comply with the most various requirements, would result in satisfying none of them, and becoming quite characterless.

But why such mixed schools? asked others. Would it not be better to erect separate institutions, perhaps not for every pursuit not literary, but for them all together? These questions may have become more important, as the confusion in the gymnasium from their attempt to attain different ends increased, and the conviction grew, that each school should have but one principle, one aim, one character.

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* J. M. Gesner, Minor German Works, p. 355. As these appeared in 1756, Gesner's "*Thoughts on the Organization of a Gymnasium*," from which the extract in the text is taken, must have been written before that time. His plan of a gymnasium includes those three classes, for the accommodation of pupils.

The history of the Berlin real school is very instructive in this connection, as furnishing a series of attempts to unite and bring into harmony with each other, humanist and real studies; the instruction of those who were and were not to become men of learning.

I have named Julius Hecker as the founder of this school.[*] He was appointed preacher at the Church of the Trinity, in Berlin, in 1739, and at the same time became instructor of the German schools belonging to the parish. He considered institutions of instruction the seed-beds of the state, from which the young, like trees from a nursery, could be transplanted into their proper places. He therefore wished for schools which should prepare for learned studies; and others which should train for the position of citizens, artisans, soldiers, and land-owners; and others for farmers and day-laborers. In accordance with this view, he organized the real school, which he established in 1747. It consisted of three schools, partly subordinated and in part co-ordinate; of the German school, the Latin school, and the real school proper. Scholars from the Latin and German schools might receive instruction in the real school also. In the latter were taught arithmetic, geometry, mechanics, architecture, drawing, and the knowledge of nature. A knowledge of the human body was especially taught, then plants and minerals, and instruction was given in the cultivation of mulberry trees and silk-worms, and the scholars were taught by being taken to workshops. Among the classes were a manufacturing class, an architectural class, an agricultural class, a book-keeping class, and a mining class.[†]

The organization of the Latin school presents nothing particular. The pupils were taught weekly, Latin twelve hours, French and other languages five hours; and the boys received besides various kinds of real instruction, and were overwhelmed with lessons. Except from twelve to one, instruction was given from seven in the morning to seven at night.

In 1753, J. F. Hälm became teacher of the real school; who taught by means of intuition, after Semler's manner. For this purpose a large collection of real objects was used, among which were models of buildings, ships, chests, plows, churns, columns of the different orders, pictorial representations of an entire Roman triumphal procession, collections of merchandise, a miniature shop, a pharmacological collection, specimens of leather, &c., &c. There was also a botanical garden adapted to the real school, and a plantation of mulberries.

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[*] The information here following is mostly from Principal Schulz's "*History of the Real School in Berlin.*" See Diesterweg's "*Rheinische Blätter,*" Vols. XXV. and XXVI., 1842.

[†] In 1748, a boarding-house was attached to the school, in which the first boarder was Friedrich Nicolai.

Hecker and Hälm laid their pedagogical views before the public. The former, among other works, wrote, in 1749, one entitled "*A sincere proposal how the Latin tongue may be maintained in worth and honor.*"* He says, "it is in vain that we strive to keep the Latin upon its ancient throne; juridical and medicinal examinations and examinations of candidates show into what a low estate it has fallen." His advice is, to pursue real studies until the eleventh or twelfth year, and then to begin Latin.

Hälm wrote, "*How to collect in real schools what is necessary and useful of languages, arts, and sciences*, 1753." He advised to give children not only oral descriptions, but also to show them things themselves, either in their natural form or in models and pictures. From his treatise will appear the connection between the specimens of leather above mentioned, and the class in manufacturing. "In the class in manufactures," he says, "they began at Christmas with the art of working in leather. To pursue this study in a manner to make it useful and practical in future life, a collection of all kinds of leather is necessary. There might be shown to youth for instruction, more than ninety kinds of leather, each piece perhaps as large as an octavo page. Among these might be all kinds of sole-leather, calves' leather, and that of cows, horses, and sheep; similar pieces of goatskin, deerskin, doeskin, buckskin, Cordovan, Morocco, Russia, and other kinds."

Julius Hecker died in 1768; and Hälm had left the school in 1759.

From the foregoing it seems clear, that there had not been enough difference, in the real schools, between the studies of those who were to be students and of those who were not; between literary studies and real studies. This occasioned the unheard of number of eleven hours of study daily; which was made necessary by the crowd of objects of instruction. It however also appears, from the same, that Hecker not only was true to his "chief principle, *non scholæ sed vitæ discendum*, but that he pushed it from a misunderstanding, even to caricatures.

The school should prepare well for life, but should not anticipate it; it should not undertake to teach what life only teaches or can teach. Hälm's words, above quoted, "At Christmas we began with the art of working in leather," must appear silly to every intelligent man. Is this the meaning of the wise maxim, *non scholæ sed vitæ discendum?* Had the real idea of life become wholly lost in that hard and dead period?

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* Ancient and Modern Schools, collected by Biedermann, 1752, Part VI.

After the death of Hecker, Johann Elias Silberschlag, known as a mathematician and naturalist, became director of the institution.* He seems to have in view a more popular distinction of the three institutions here united under the common name of "real school." He gave to the three the names of Pædagogium, art school, and German or artisans' school.

The German school was the elementary school for all, but had also an especial class in trades. In the art school, the students laid the foundation of a knowledge of mathematics, Latin, and French, although this school was particularly intended for workmen, farmers, and others not proposing to study. The teachers of mathematics in this school gave as rules, "Axioms and theorems which did not require theoretical acuteness;" these being needed in the Pædagogium. In this there were two theoretical-mathematical classes; in the lower of which arithmetic was taught, in the other algebra. The other studies of the Pædagogium were the usual ones of the higher gymnasium class. Silberschlag leaving in 1784, Andreas Jacob Hecker succeeded him in his office. An education for special pursuits was more and more aimed at in the artisans' school; there were given in it special lectures to future miners and smelters, and particularly for those preparing to become practical geometers, artillerists, foresters, farmers, merchants, &c. Some hours weekly were even devoted to instruction in German; "in order to make those, who shall wish in future to engage as secretaries to high boards of authorities in the country, better acquainted with the course of business." Thus the real school of arts was a gathering of the most dissimilar schools for special pursuits. "The idea rises of necessity," says the historian of the school, "that where the endeavor is to reach every one, but little will be actually attained. And this was the fact with our real school."

During the same time, the Pædagogium, under Hecker, acquired more the peculiar character of a literary school. In 1797, on the occasion of its fiftieth anniversary festival, it took the name of the Friedrich Wilhelm's Gymnasium;" and, in the year 1811, it was finally separated from the real school, in respect to its teachers and its lectures.† Long and hard experience had at last brought the conviction that the previous close connection of the two institutions was a *mésalliance*, by which both lost their independence of character.

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* It is characteristic of the man, that he was at the same time a consistorial counselor and high counselor of public buildings.

† That is, from the real school in its more proper sense; the school of arts of Silberschlag.

The purposes of the two institutions being so different, it was necessary that the teaching in real studies in the gymnasium must be entirely distinct from that in the real schools; and the instruction in language in the real school from that in the gymnasium. There must be a distinction in selection, method, and design.

One observation suggests itself here. Gymnasiums are, as to their instruction, really and clearly distinct universities, in this; that they look only to the general education, as the foundation for instruction in all vocations, while the universities are characterized by study in the faculties, and thus prepare for the entrance into real life. It was with justice that great displeasure was manifested, when, at the end of the last century, a master required that future jurists, in the gymnasium, should study, instead of Tacitus and Virgil, the institutions of Heineccius. The gymnasium knows no professional studies, and should know of none; lest it should forcibly communicate, to immature boys, a professional education without any real basis.

Does this same distinction apply to real schools? was it not the greatest of mistakes, that in the Berlin school direct instruction was given for miners, farmers, &c., &c.?

Such a purpose was that of the excellent Spilleke, who assumed the direction of the real school in 1820.* His opinion was, that this school should, in its higher classes, "give or at least introduce to such an education as, without pretending to thorough classic studies, should prepare for the higher relations of society; but a more special preparation, such as was aimed at in earlier times in this part of the school, is not proper."

If we understand Spilleke here, he suggests new questions. If the real schools must correspond with the gymnasiums, how must those real studies be organized which correspond with the universities; in which the real scholars intend to finish their studies?

Are our polytechnic schools and higher industrial schools true "real" universities? Do they, by virtue of the great variety of their studies in arts and trades, become divided into parts which correspond to the faculties of the universities? Or are such "real" universities not practicable, and must there be a special school for each trade, because most occupations have some peculiar elements in their life? The miner must ultimately be trained in the mine, the sailor on the sea, the farmer in the country; but all three can receive their general preparatory training in the same real school. And indeed, if students of many arts and trades should enjoy primary instruction, whether carried more or less far, should not this be followed by a purely practical study and drill in the pursuit, under the guidance of skillful masters; and should not their more complete artistic or scientific training come after these years of apprenticeship?

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* A. J. Hecker died in 1819, and was followed by Bernardi, who died the next year. After him came Spilleke, who was succeeded, after his death, in 1841, by F. Ranke, distinguished both as an educator and a man of learning.

But I must not too far transgress my limits as a historian. When rector Schöttgen, in 1742, published his "*Modest proposal*," for making suitable provision for the instruction of children who are not to study Latin, he hopelessly added, as we have seen, "My proposal is already rejected, before it has been brought into the light." But encouraging himself, he went on: "But yet, if what is proposed therein is not yet ripe, we will wait until its time shall come."

The old rector prophesied rightly. One century after he wrote, there were, in the Prussian states alone, forty-two real institutions, to one hundred and twenty-six gymnasiums.

[To enable our readers, who may not have access to Bache's "*Education in Europe*," or to Barnard's "*National Education in Europe*," we transfer from the latter the following account of a Real School, and Art Institute of our day, in Prussia, as compared with a Gynasium of the highest grade.—Ed.]

FREDERICK WILLIAM GYMNASIUM OF BERLIN.

This institution dates from 1797, and was at first an appendage to the "real school" of Mr. Hecker. It is now a royal institution, and is independent of the real school, except so far that it has the same director, and that the preparatory classes are in the real school, in which, or in other equivalent schools, the pupils are taught until ten years of age. The qualifications for admission are those contained in the general account of the gymnasia. This gymnasium had, in 1837, four hundred and thirty-seven pupils, divided into six classes, and instructed by fourteen teachers and six assistants. The second and third classes are subdivided into two parts, called upper and lower, pursuing different courses, and both divisions of the third class are again subdivided into two others, for the convenience of instruction. The course in each class occupies a year, except in the first, which is of two years. Pupils who enter in the lowest class, and go regularly through the studies, will thus remain nine years in the gymnasium. The numbers of the several classes in 1837 were, in the first, fifty-four; in the upper second, thirty-two; lower second, forty-seven; upper third division, first, or A, thirty-six; second division, or B, thirty-six; lower third, division first, or A, thirty-eight; division second, or B, thirty-two; fourth class, fifty-five; fifth, fifty-seven; and sixth, fifty. Each division averages, therefore, nearly forty-four pupils, who are at one time under the charge of one teacher. One hundred and eight were admitted during the year, and the same number left the gymnasium; of these, twenty-one received the certificate of maturity to pass to the university, viz., ten who intend to study law, three medicine, five theology, one theology and philology, one philosophy, and one political economy, finance, &c., (cameralistic.) Of these all but five were two years in the first class; out of this number two were two years and a half in the first class, and three more had been in the gymnasium less than two years, having entered it in the first class. The average age at leaving the gymnasium was nearly nineteen years, and the greatest and least, respectively, twenty-two and between sixteen and seventeen years. It appears, thus, that on the average, the pupils actually enter at ten, and remain nine years, as required by rule.

The subjects of instruction are Latin, Greek, German, French, religious instruction, mathematics, (including arithmetic, algebra, and geometry,) natural philosophy and natural history, history, geography, writing, drawing, vocal music, and Hebrew for theologians.

The numbers attached to the names of the different classes, in the following programme, show the number of hours of study per week in the regular branches in which the division of classes takes place. In like manner, the numbers attached to the several subjects of study show how many hours are occupied per week in each of the subjects by the several classes.

SIXTH CLASS, THIRTY HOURS.

Latin. Inflections of nouns, &c. Comparisons. Conjugation of the indicative moods of regular and of some irregular verbs. Translation from Blume's elementary book. Exercises from Blume. Extemporalia. Ten hours.

German. Etymology and syntax. Exercises in writing upon subjects previously narrated. Exercises in orthography, reading, and declaiming. Four hours.

French. Etymology, to include the auxiliary verbs, in Herrmann's grammar. Oral and written exercises. Reading and translation. Exercises on the rules from the grammar. Three hours.

Religion. Bible history of the Old Testament. Committing to memory selected verses. Two hours.

Geography. Delineation of the outlines of Europe, Africa, Asia, and America, from determinate points given. Divisions of the countries, with their principal cities, rivers, and mountains. Two hours.

Arithmetic. The four ground rules, with denominate whole numbers. Their applications. Four hours.

Writing. Elements of round and running hand. Dictation. Writing from copy slips. Three hours.

Drawing. Exercises in drawing lines. Two hours.

FIFTH CLASS, TWENTY-NINE HOURS.

Latin. Etymology. Use of the prepositions. The accusative before an infinitive, practiced orally and in writing, and extempore, and in exercises. Translation from Blume's reader. Ten hours.

German. Parsing, reading, and declamation. Exercises on narrations. Four hours.

French. Etymology, by oral and written exercises. Easier stories from Herrmann's reader. Three hours.

Religion. Explanation of the gospels, according to St. Matthew and St. Luke. Committing to memory the principal facts. Two hours.

Geography. Review of the last year's course. Rivers and mountains of Europe, and chief towns, in connection. Two hours.

Arithmetic. Review of the preceding Fractions Four hours.

Writing. Running hand from copy slips. Two hours.

Drawing. Drawing from bodies, terminated by planes and straight lines. Two hours.

FOURTH CLASS, TWENTY-EIGHT HOURS.

Latin. Review of etymology. The principal rules enforced by oral and written exercises and extemporalia. Translation from Jacob's reader and Corn. Nepos. Ten hours.

German. Compositions on subjects previously read. Declamation. Reading from Kalisch's reader. Parsing. Three hours.

French. Review of etymology. Irregular verbs. Reciprocal verbs. Anecdotes and narrations from Herrmann's grammar, and committing the principal to memory. Two hours.

Religion. Gospel, according to St. Matthew, explained. Verses and psalms committed to memory. Two hours.

Geography. Political geography of Germany, and of the rest of Europe. Review of the geography of the other parts of the world. Three hours.

Arithmetic. Review of fractions. Simple and compound proportion. Partnership. Simple interest. Three hours

Geometry. Knowledge of forms, treated inductively. One hour.

Writing. Running hand, from copy slips. Two hours.

Drawing. From bodies bounded by curved lines. Two hours.

LOWER THIRD CLASS, THIRTY HOURS.

Latin. Syntax. Rules of cases from Zumpt. Exercises and extemporalia. Inflections formerly learned reviewed. Cornelius Nepos Eight hours.

Greek. Etymology, from Buttmann's grammar to regular verbs, included. Translation from Greek into German from Jacob's, from German into Greek from Hess's exercises. Six hours.

German. Compositions in narration and description. Declamation. Two hours.

French. Repetition of inflections, and exercises by extemporalia and in writing. Translation of the fables from Herrmann's reading book, 2d course. Two hours

Religion. Morals, and Christian faith. Two hours.

Geography. Physical geography Europe and the other parts of the world. Two hours

History General view of ancient and modern history. Two hours.

Mathematics. Legendre's geometry, book 1. Decimals. Algebra. Square and cube root. Four hours.

Drawing. Introduction to landscape drawing. Two hours.

UPPER THIRD CLASS, THIRTY HOURS.

Latin. *Division I.* Syntax. from Zumpt. Review of the preceding course. Oral exercises in construction of sentences. Written exercises and extemporalia. Cæsar Bell. Gall books 1, 2, and 7, in part. Ovid's Metamorphoses, extracts from books 7 and 8. Prosody, rules from Zumpt. Ten hours.

Greek. Division I. Etymology, from Buttmann's grammar. Oral and written exercises and extemporalia. Jacob's reader. Six hours.

German. Examination of exercises on historical subjects. Poetical selections for declamation. Two hours.

French. Exercises in translation. Written exercises. Extemporalia. Two hours.

Religion. Principal passages from the gospels gone over. General view of the Old Testament writings. Two hours.

History and Geography. Roman history, from the Punic Wars to the destruction of the western empire. History of the middle ages, three hours. Review of the five general divisions of the world, one hour. Four hours.

Mathematics. Geometry. Legendre, books 1 and 2, and part of 3. Algebra, with exercises from Meyer Hirsch. Four hours.

LOWER SECOND CLASS, THIRTY-ONE HOURS.

Latin. Extracts from Livy and Cæsar de Bell. Civ. Review of Bell. Gall., books 2 and 3. Syntax. Exercises and extemporalia. Committing to memory exercises from Livy and Cæsar. Ovid's Metamorphoses, books 11 to 14. Eight hours.

Greek. Homer's Odys., 11, 12, 13, and 14. Exercises on the dialects. Xenophon's Anab. 1. 2, and part of 3. Excerpts from the grammar reviewed. Exercises and extemporalia. Syntax. Six hours.

Hebrew. Grammar, ending with irregular verbs. Easier parts of historical books of Scripture translated. Vocabulary learned by rote. Exercises on regular and irregular verbs out of the recitation room. Two hours.

German. Correction of written exercises and essays. Exercises on delivery. Two hours.

French. Voltaire's Charles XII. Exercises and extemporalia. Two hours.

Religion. Explanation of the principal parts of the Epistles of St. Paul, with historical sketches, and a view of the life of early Christian communities. Two hours.

History. Roman history, from the Punic Wars. History of the middle ages concluded. General view of history. Three hours.

Mathematics. Geometry to proportions and simple figures. Elements of algebra. Logarithms. Four hours.

Natural History. Mineralogy. Botany, especially of native plants. Two hours.

UPPER SECOND CLASS, THIRTY-TWO HOURS.

Latin. Cicero's Orations, pro. Rosc. Amer., de Amic., de Senectute. Livy, books 22 to 25, inclusive. Virgil's Æneid, books 1 and 2. Some eclogues and excerpts from Georgics. Exercises and extemporalia. Nine hours.

Greek. Homer's Iliad, books 4 to 11, inclusive. Arrian Alex. expedition, books 1 and 2. Buttmann's grammar, with exercises and extemporalia. Six hours.

Hebrew. Books of Judges and of Ruth, with exercises of syntax. Easy exercises, and committing vocabulary to memory out of the class-room. Two hours.

German. Essays. Delivery. Two hours.

French. Excerpts from Herrmann and Brüchner's manual of the more recent French literature. Two hours.

Religion. Christian faith and morals. Two hours.

History. Review of ancient history and geography, using the Latin language. Three hours.

Mathematics. Arithmetical geometry and plane trigonometry. Algebraic exercises. Polygons. Stereometry. Simple and quadratic equations. Four hours.

Physics. General physics. Electricity and magnetism. Two hours.

FIRST CLASS, THIRTY-ONE HOURS.

Latin. Horace's Odes, books 3 and 4. Cicero against Verres. Tacitus, Annals, books 11 and 12, and extracts from 3 to 6. Cicero, Tusc. quest. Extempore translations from German into Latin. Exercises. Declamation. Eight hours.

Greek. Homer's Iliad, book 16, Odyssey, books 9 to 16, inclusive. Hippias Major, Charmides, and Gorsias of Plato, (excerpts.) Sophocles' Edip. tyr. and Antigone. Grammatical exercises. Buttmann's grammar. Six hours.

Hebrew. Second book of Kings. Genesis. Psalms, 61 to 100. Grammatical criticisms of historical excerpts, or of psalms, as an exercise at home. Two hours.

German. Criticism of compositions. General grammar, and history of the German grammar and literature. One hour.

French. Selections from Scribe and Delavigne. Exercises and extemporalia. Two hours.

Religion. History of the Christian church, to the times of Gregory VII. Two hours.

History. Modern history, and review. Three hours.

Mathematics. Plane trigonometry and application of algebra to geometry. Algebra. Mensuration and conic sections. Binomial theorem. Exponential and trigon. functions. Four hours

Physics. Physical geography. Mechanics. Two hours

Philosophy. Propædeutics. Logic. One hour.

There are five classes for vocal music, the fifth receiving two hours of instruction in musical notation and singing by ear. The fourth, time and cliffs, &c. Exercises in the natural scale, and harmony. Songs and chorals with one part. The third, two hours, formation of the scale of sharps, running the gamut with difficult intervals, combined with the practical exercises of the last class. The second, two hours, repetition of tones; sharps, and flats. Formation of the scale of flats. Exercises of songs and chorals, in two parts. The first class is an application of what has been learned, as well as a continuation of the science and art, and all the pupils do not, of course, take part in this stage of the instruction. The course is of four hours per week, two for soprano and alto one for tenor and bass, and one for the union of the four parts. The proficiency is indicated by the fact, that the pupils perform very creditably such compositions as Haydn's "Creation" and Handel's "Messiah."

The extemporalia spoken of in the courses of language, consist of written translations made on the spot by the pupils into a foreign language, of sentences spoken in the vernacular by the teacher. These sentences are, of course, adapted to the progress of the pupil, and are prepared beforehand by the teacher who renders them, especially in the early parts of the course, the application of the rules of grammar on which the pupil is engaged, or of peculiarities of idiom to which his attention is called.

In the classical course, the oral and written exercises are varied in their relative proportions to each other. The translation from Latin or Greek into German, and vice versa, the grammatical exercises, Latin compositions or essays, the extemporalia before explained, the practice in versification, &c., are varied in amount in the different classes, according to the views of the instructor.

One characteristic difference between the classical instruction in the higher classes and in those of similar schools in England and our country, is that, in general, it supposes the grammatical minutiæ to have been fully impressed in the lower classes, and discusses philological questions, varieties of reading and collateral subjects of antiquities, history, biography, and geography. The students receive much oral instruction, which they are required to record. The same is the practice to even a greater extent in the other departments of instruction, and the students thus acquire a facility in taking notes which they turn to good account in the university lectures, and which strikes a stranger with surprise on first witnessing it.

Most of the pupils in this class of schools begin their classical course at nine or ten years of age, and yet, judging by the progress shown in the programme of the first class, and by the scholars which the universities of northern Germany turn out, and which are, in fact, formed in the gymnasia, the proficiency is all that can be desired. It is what a youth of nineteen issuing from one of our colleges would be proud of, and clearly proves that the classics are not begun too late.

The mother tongue and French are both taught in these institutions, in combination with the classical studies. These languages are not merely entered upon the programme, but are actually more or less thoroughly taught, according to the time which is allotted and the skill of the teacher. The course of German would seem calculated to make both writers and speakers, and, probably, if the demand for the latter were equal to that of the former, this would prove true in the latter case, as it does in the former.

The religious characteristic of these schools is a striking one, and important in its effects. The Bible is taught rather than a particular creed, though from the fact that the pupils are nearly all of one creed, this forbearance is not essential, and is not always exercised. The separation of religious from other instruction can but have a most injurious tendency, and their connection, as in these schools, on the contrary, a happy influence. Religious knowledge is classed with the sciences in the formal division of the subjects of study.

The courses of physics of the Frederick William gymnasium are exceedingly well calculated to fullfil their object, to give general ideas of natural phenomena, without going into what may be considered technical minutiæ; in the latter school physics is connected with an excellent course of physical geography. It seems to me doubtful whether, in the natural history course, more than a general outline of the subject, is necessary, with the prosecution, practically, of such branches as the locality of the institution may render applicable for improving the habits of observation and discrimination. The scientific details of the different branches belong rather to special purposes of study than to general education. The experience of these institutions may, however, be appealed to as proving the entire compatibility of such instruction with an otherwise sound system, and the entire possibility of accomplishing it without neglecting other more important branches.

Drawing and vocal music, which form parts of the regular courses of all these institutions, have not yet found their way into the systems of other nations on the same footing with the regular studies. As a part of physical training, they are important, and as offering a relief from severer pursuits, further recommend themselves in this connection.

The Frederick William Gymnasium is regarded by Dr. Bache, as a fair specimen of this class of schools in Prussia; in the organization and instruction of which a good degree of liberty is tolerated by the government, to enable them the better to meet the peculiar circumstances of each province, and the peculiar views of each director.

The Royal Real School, and City Trade School of Berlin, furnish a course of instruction of the same general value for mental discipline, but better calculated for that class of pupils who are destined in life, not for what are designated as the learned profession, but for tradesmen and mechanics. There is less of verbal knowledge but more of mathematics and their application to the arts; and the whole is so arranged as to facilitate the acquisition of those mental habits which are favorable to the highest practical success.

ROYAL REAL SCHOOL OF BERLIN.

The Royal Real School of Berlin was founded as early as 1747, by Counsellor Hecker. At the period in which this school was founded, Latin and Greek were the exclusive objects of study in the learned schools, and the avowed purpose of this establishment was that "not mere words should be taught to the pupils, but realities, explanations being made to them from nature, from models and plans, and of subjects calculated to be useful in after-life." Hence the school was called a "real school," and preserves this name, indicative of the great educational reform which it was intended to promote, and the success of which has been, though slow, most certain.

The successor of Hecker, in 1769, divided this flourishing school into three departments, the pedagogium, or learned school, the school of arts, and the German school: the whole establishment still retaining the title of real school. The first named department was subsequently separated from the others, constituting the Frederick William gymnasium; the school of arts, and the German, or elementary school, remain combined under the title of the royal real school. The same director, however, still presides over the gymnasium and the real school.

The question has been much agitated, whether the modern languages should be considered in these schools as the substitutes for the ancient in intellectual education, or whether mathematics and its kindred branches should be regarded in this light. Whether the original principle of the "realities" on which the schools were founded, was to be adhered to, or the still older of verbal knowledge, only with a change of languages, to be substituted for it. In this school the languages will be found at present to occupy a large share of attention, while in the similar institution, a description of which follows this, the sciences have the preponderance.

In the royal real school the branches of instruction are—religion, Latin, French, English, German, physics, natural history, chemistry, history, geography, drawing, writing, and vocal music. The Latin is retained as practically useful in some branches of trade, as in pharmacy, as aiding in the nomenclature of natural history, and as preventing a separation in the classes of this school and that of the gymnasium, which would debar the pupils from passing from the former to the latter in the upper classes. It must be admitted that, for all purposes but the last, it occupies an unnecessary degree of attention, especially in the middle classes.

The following table shows the distribution of time among the courses. There are seven classes in numerical order, but ten, in fact, the third, fourth, and fifth being divided into two; the lower fourth is again, on account of its numbers, subdivided into two parallel sections. Of these, the seventh, sixth, and fifth are elementary classes, the pupils entering the seventh at between five and seven years of age. In the annexed table the number of hours of recitation per week of each class in the several subjects is stated, and the vertical column separating the elementary classes from the others, contains the sum of the hours devoted to each branch in the higher classes, excluding the lower section of the fourth class, which has not a distinct course from that of the other division.

TABLE SHOWING THE NUMBER OF HOURS OF RECITATION PER WEEK, OF EACH CLASS, IN THE SUBJECTS TAUGHT IN THE ROYAL REAL SCHOOL OF BERLIN.

SUBJECTS OF STUDY.	First Class.	Second Class.	Third Class, A.	Third Class, B.	Fourth Class, A.	Fourth Class, B. I.	Fourth Class, B. II.	Sum of the hours in the seven upper classes.	Fifth Class, A.	Fifth Class, B.	Sixth Class.	Seventh Class.	Proportion of other studies to German in the		
													Royal Real School.	First six classes of the Fred'k Wm. Gymn.	In all the classes of the Fred'k. Wm. Gymn.
Latin,	4	4	4	5	6	5	6	28					1.4	2.9	3
French,	4	4	4	3	3	4	4	22	4	5			1.1	0.7	0.9
English,	2	2	2					6					0.3		
German,	3	3	3	4	3	4	4	20	8	8	10	10	1.0	0.8	1.0
Religion,	2	2	2	2	2	2	2	12	2	3	2	2	0.6	0.6	0.8
Mathematics,*	6	6	5	6	7	6	4	35	4	3	6	6	1.7	1.1	1.6
Natural History,	3	2	2	2				9					0.4	0.1†	0.1
Physics,	2	2	2	2				8					0.4	0.2†	0.2
Chemistry,	2	2	2	2				8					0.4		
Geography,				3	3	3	3	9	2	2	2		0.4	0.5	0.5
History,	3	3	3	2	2	2	2	15	2	2	2		0.7	0.3	0.7
Drawing,	2	2	2	2	2	2	2	12					0.6	0.4	0.4
Writing,					2	2	2	4	4	4	6	8	0.2	0.3	0.3
Singing,	2	4	3	2	2	2	2	15					0.7	0.6	0.6
Total,	36	36	35	35	32	32	32		26	26	26	26			

Pupils who enter this school between five and seven years of age, and go regularly through the elementary classes, are prepared at ten to pass to its higher classes, or to enter the lowest of the gymnasium. It is thus after the fifth class that a comparison of the two institutions must begin. The studies of the real school proper, and of the gymnasium, have exactly the same elementary basis, and they remain so far parallel to each other that a pupil, by taking extra instruction in Greek, may pass from the lower third class of the former to the lower third of the latter. This fact alone is sufficient to show that the real schools must be institutions for secondary instruction, since the pupils have yet three classes to pass through after reaching the point just referred to. It serves also to separate the real schools from the higher burgher schools, since the extreme limit of the courses of the latter, with the same assistance in regard to Greek, only enables the pupil to reach the lower third class of the gymnasium. In general, a pupil would terminate his studies in the real school at between sixteen and eighteen years of age. The difference between the subjects of instruction in the real school and the Frederick William gymnasium, consists in the omission in the former of Greek, Hebrew, and philosophy, and the introduction of English and chemistry. The relative proportions of time occupied in the same subjects in the two schools, will be seen by comparing the two columns next on the right of the numbers for the seventh class, in the table just given. The first of these columns contains the proportion of the number of hours per week devoted to the different subjects in the six classes of the real school above the elementary, the number of hours devoted to the German being taken as unity; and the second, the same proportion for six classes of the gymnasium, beginning with the lowest, the same number of hours being taken as the unit, as in the preceding column. To bring the natural history and physics into comparison, I have taken the numbers for the upper classes of the gymnasium in which these branches are taught. Of the courses common to the two schools, those to which nearly equal attention is paid in both institutions, are—the religious instruction, the German, geography and history, writing, and vocal music. The French, mathematics, physics, and natural history, predominate in the real school, the Latin in the gymnasium. The effect of reckoning the first, second, and upper third classes of the gymnasium, does not materially change the proportionate numbers of the courses which are common to the two schools, except as to Latin and mathematics. To show this, the column on the extreme right of the table is introduced, containing the proportions for all the nine classes of the Frederick William gymnasium.

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* Including arithmetic, geometry, algebra, and trigonometry.

† These numbers include the entire course.

There were, in 1838, five hundred and ten pupils in this real school, under the charge of fourteen regular or class masters, teaching several subjects in the lower classes, and of six other teachers. Each of the eleven class divisions thus averages about forty-six, who are under the charge of one teacher at a time.

The elementary course in the real school is similar to that described in the burgher schools, beginning with the phonic method of reading, the explanations of all the words and sentences being required at the same time that the mechanical part of reading is learned. Written and mental arithmetic are taught together in the lowest class. The religious instruction consists of Bible stories adapted to their age; and verses are committed to improve the memory of words. The exercises of induction are practiced, but in a way not equal to that with objects, introduced by Dr. Mayo in England. Some of the pupils are able to enter the gymnasium after going through the two lowest classes.

In regard to the real classes proper, as I propose to enter into the particulars of the course of study of the trade school, I shall here merely make a few remarks upon two of the branches studied in them, namely, French and drawing. The remarks in regard to the French will serve to show how great a latitude a teacher is allowed in the arrangement of his methods, the result of which is, that those who have talent are interested in improving their art by observation and experiment. The French teacher to whom I allude had been able to secure the speaking, as well as the reading, of French from his pupils. From the very beginning of the course this had been a point attended to, and translation from French into German had been accompanied by that from German into French: the conversation on the business of the class-room was in French. The pupils were exercised especially in the idioms of the language in short extempore sentences, and the differences of structure of the French and their own language were often brought before them, and the difficulties resulting from them anticipated. Difficult words and sentences were noted by the pupils. Declamation was practiced to encourage a habit of distinct and deliberate speaking, and to secure a correct pronunciation. The chief burthen of the instruction was oral. Without the stimulus of change of places, the classes under this gentleman's instruction were entirely alive to the instruction, and apparently earnestly engaged in the performance of a duty which interested them. If such methods should fail in communicating a greater amount of knowledge than less lively ones, which I belive can not be the case, they will serve, at least, to break down habits of intellectual sloth to promote mental activity, the great aim of intellectual education.

The drawing department of this school is superintended by a teacher who has introduced a new method of instruction, particularly adapted to the purpose for which drawing is to be applied in common life and in the arts; a method which is found to enable a much larger proportion of the pupils to make adequate progress than the ordinary one of copying from drawings.* In this method the pupil begins by drawing from simple geometrical forms, those selected being obtained from models in wood or plaster, of a square pillar,† a niche, and a low cylinder, (the form of a mill-stone.) The square pillar separates in joints, affording a cube and parallelopipeds of different heights. The hemisphere which caps the niche may be removed, leaving the concave surface of its cylindrical part. The exercises of the pupil ran thus: First, to place upon a board, or upon his paper or slate, a point vertically above another, or so that the lines joining the two shall be parallel to the right or left hand edge of the board, paper, or slate. Second, to join them. Third, to place a point horizontally from the second, and at a distance equal to that between the first and second points. Fourth, to place one vertically over the third, and at a distance equal to that below the first, and to join the third and fourth. The first and fourth being then joined, a square is formed. After practice in this, the simple elevation of the cube is drawn. Next, a perspective, by the use of a small frame and silk threads, such as is common in teaching the elements of this subject, and by means of which the pupil acquires readily a knowledge of the practice. The drawing of lines in various positions, and with various proportions, terminates this division of the subject. The niche and cylinder afford a similarly graduated series of lessons on the drawing of curved lines, and the drawing of lines of different degrees of strength and of shadows is introduced. This is accompanied with some of the more simple rules of shadow and shade. More difficult exercises of perspective follow from natural objects and from works of art or mechanism, according to the direction to the pupil's attainments and the amount of taste which he displays. This method of teaching has been introduced quite generally in Prussia, and with the best results as to the formation of accuracy of eye and of hand.

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* Mr. Peter Schmidt, who now, in his old age, has received from the government a pension in return for the introduction of his method, and the instruction in it of a certain number of teachers.

† Seven and a half inches high, and one inch and a half in [illegible] section.

CITY TRADE SCHOOL.

The City Trade School was founded to give a more appropriate education for the mechanic arts and higher trades than can be had through the courses of classical schools. It is a great point gained, when the principal is admitted that different kinds of education are suited to different objects in life; and such an admission belongs to an advanced stage of education. As a consequence of a general sentiment of this kind, numerous schools for the appropriate instruction of those not intended for the learned professions grow up by the side of the others.

The city of Berlin is the patron of the trade school which I am about to notice, as the king is of the real school already spoken of. Its stability is thus secured, but the means of furnishing it with the necessary materials for instruction are liberally provided.* The trade school is a day school, and consists of five classes, of which the lowest is on the same grade as to age and qualification at admission, as the fourth class of a gymnasium. It is assumed that at twelve years of age it will have been decided whether a youth is to enter one of the learned professions, or to follow a mechanical employment, or to engage in trade, but the higher classes are not closed against pupils. Of the five classes, four are considered necessary for certain pursuits and the whole five for others; the courses of all but the first class last one year, that of the first, two years, a youth leaving the school at from 16 to 17 or 18 years of age, according to circumstances. During the year 1836–7, the number of pupils in the several classes were, in the first class, eleven; in the second, twenty-nine; in the upper third, forty-three; in the lower third, fifty-two; in the fourth, fifty; total, one hundred and eighty-five; from which numbers it appears that a considerable proportion of the pupils leave the school without entering the first class. The number of teachers is nineteen, five being regular or class teachers, and fourteen assistants. The director gives instruction.

The following list of the callings to which pupils from this school have gone on leaving it, will show that it is really what it professes to be, a school for the instruction of those who intend to follow occupations connected with "commerce, the useful arts, higher trades, building, mining, forestry, agriculture, and military life;" and further, that its advantages are appreciated by the class for whom it is intended. The list includes the pupils who have left the school from the first and second classes, in the years 1830, 1832, 1833 and 1837. From the first class, two teachers, five architects, one chemist, twenty-six merchants, one machinest, two calico-printers, two glass-workers, one cloth manufacturer, one silk manufacturer, one miner, thirteen agriculturalists, eight apothecaries, two gardeners, one painter, one mason, one carpenter, one tanner, one miller, one baker, one potter, one saddler, one soap-boiler, one cabinet-maker, two soldiers, one musician, five to public offices, one to the trade institution, six to gymnasium. From the second class, forty-one merchants, one teacher, one chemist, one machinest, one ship-carpenter, nine agriculturist, one sugar-refiner, three dyers, one tanner, one brewer, two distillers, one miner, two lithographers, one dye-sinker, three apothecaries, one dentist, two painters, two gardeners, three masons, five carpenters, one miller, four bakers, one butcher, one to the trade institution, three to public offices, two to a gymnasium, one musician, one veterinary surgeon, one soldier, being ninety from the first class, and ninety-seven from the second, in the period of four years.

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* The present director of this school, Mr. Kloden, was formerly director of the higher burgher school at Potsdam, and is one of the most distinguished teachers in his line in Persia.

In the course of instruction, the sciences and kindred branches are made the basis, and the modern languages are employed as auxiliaries, the ancient languages being entirely omitted. The subjects embraced in it are—religious instruction, German, French, English, geography, history, mathematics, physics, chemistry, technology, natural history, writing, drawing, and vocal music.

The courses are fully laid down in the following list, beginning with the studies of the lowest or fourth class.

FOURTH CLASS.

*Religious Instruction.** The gospel according to St. Luke, and the Acts of the Apostles explained, with a catechetical development of the truths of religion and ethical applications. Two hours per week.

German. Grammatical exercises in writing. Recital of poetical pieces.

French. Grammatical exercises. Regular and irregular verbs. Reading from Lauren's Reader. One hour of conversation. Four hours.

Arithmetic. Mental and written, including proportions and fractions, with the theory of the operations. Four hours.

Geometry. Introductory course of forms. Two hours.

Geography. Elementary, mathematical, and physical geography. Two hours.

Natural History. In the summer term, elements of botany, with excursions. In the winter, the external characters of animals. Two hours.

Physics. Introductory instruction. General properties of bodies. Forms of crystals, specific gravity, &c. Two hours.

Writing. Two hours.

Drawing. Outline drawing and shadows, from models and copy-boards. Two hours.

Vocal Music. Two hours.

LOWER THIRD CLASS.

Religious Instruction. The Acts of the Apostles and the Epistles read and explained. Two hours.

German. Grammar with special reference to orthography and etymology. Written exercises upon narrations made by the teacher. Delivery of poetical pieces. Four hours.

French. Translation from French into German from Gredicke's Chrestomathy. Grammar; irregular verbs. Extemporalia, and translations from German into French. Four hours.

Arithmetic. Partly abstract, partly practical, from Diesterweg's Instructor. Four hours.

Geometry. Determination of angles in triangles and polygons. Equality of triangles. Dependance of angles and sides of triangles. Constructions. Three hours.

Geography. Physical description of the parts of the earth, except Europe. Two hours.

Natural History. Mineralogy. In summer, botany, the class making excursions for practical exercise. Man. Three hours.

Physics. General properties of bodies and solids in particular. Doctrines of heat and their application to natural phenomena and the arts. Two hours.

Chemistry. Introduction. Atmospheric air. Experimental illustrations of chemistry, applied to the arts. Two hours.

Writing. Two hours. *Architectural and topographical drawing.* Two hours. *Drawing* by hand for those who do not take part in the other. Two hours.

Vocal Music. Two hours.

UPPER THIRD CLASS.

Religious Instruction. Christian morals, from Luther's Catechism. Two hours.

German. Simple and complex sentences. Compositions on special subjects. Poems explained and committed. Four hours.

French. Translation from Gredicke's Chrestomathy, oral and in writing. Written translations from Beauvais' Introduction, from German into French. Grammar, examples treated extempore. Four hours.

Arithmetic. Properties of numbers. Powers. Roots. Decimal fractions Practical Arithmetic from Diesterweg. Four hours.

Geometry. Similar figures. Geometrical proportion. Exercises. Mensuration of rectilinear figures. Three hours.

Geography. Physical geography of Europe, and in particular of Germany and Prussia. Two hours.

Natural History. Continuation of the mineralogy of the lower third class. Review in outline of zoology and the natural history of man in particular. Botany, with excursions in summer. Three hours.

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* Roman Catholic pupils are not required to take part in this instruction, which is communicated by a Protestant clergyman.

Physics. Electricity and magnetism, with experiments. Two hours.

Chemistry. Water and non-metallic bodies, with experiments. Two hours.

Writing. Two hours. *Architectural and topographical drawing.* Two hours. Some of the pupils during this time are engaged in ornamental drawing.

Vocal Music. Two hours.

SECOND CLASS.

Religious Instruction. Explanation of the first three gospels. History of the Christian religion and church to the reformation. Two hours.

German. Correction of exercises written at home, upon subjects assigned by the teacher. Oral and written exercises. Introduction to the history of German poetry Three hours.

French. Grammar; extemporalia for the application of the rules. Written and oral translations from German into French, from Beauvais' Manual, and vice versa, from Ideler and Nolte's Manual. Four hours.

English. Exercises in reading and speaking. Translation into German, from Burkhardt. Dictation. Verbs. Two hours.

Arithmetic. Commercial Arithmetic. Algebra, to include simple and quadratic equations. Logarithms. Three hours.

Geometry. Circles. Analytical and plane trigonometry. Three hours.

Geography. The states of Europe, with special reference to their population, manufactures and commerce. Two hours.

History. Principal events of the history of the middle ages and of later times, as an introduction to recent history. One hour.

Natural History. Mineralogy. Physiology of plants. Three hours.

Chemistry. Metallic bodies and their compounds, with experiments. Three hours.

Architectural, topographical, and plain drawing. Drawing with instruments. Introduction to India ink drawing. Beginning of the science of constructions. Two hours.

Drawing. From copies, and from plaster and other models. Two hours. This kind of drawing may be learned instead of the above.

Vocal Music. Two hours.

FIRST CLASS.

Religious Instruction. History of the Christian religion and church continued. References to the bible. One hour.

German. History of German literature to recent times. Essays. Exercises of delivery. Three hours.

French. Reading from the manual of Buchner and Hermunn, with abstracts. Classic authors read. Review of Grammar. Exercises at home, and extemporalia. Free delivery. Correction of exercises. Four hours.

English. Syntax, with written and extempore exercises from Burkhardt. Reading of classic authors. Writing of letters. Exercises in speaking.

Arithmetic. Algebra. Simple and quadratic equations. Binomial and polynomial theorems. Higher equations. Commercial arithmetic continued. Three hours.

Geometry. Plane trigonometry and its applications. Conic sections. Descriptive Geometry. Three hours.

History. History of the middle ages. Modern history, with special reference to the progress of civilization, of inventions, discoveries, and of commerce and industry. Three hours.

Natural History. In summer, botany, the principal families, according to the natural system. In winter, zoology. The pupils are taken, for the purpose of examining specimens to the Royal Museum.

Physics. In summer, optics with experiments. In winter the system of the world. Three hours.

Technology. Chemical and mechanical arts and trades, described and illustrated by models. Excursions to visit the principal workshops. Four hours.

Architectural and machine drawing. Two hours. Those pupils who do not take part in this, receive lessons in ornamental drawing from plaster models.

Vocal Music. Two hours.

The pupils of this class are, besides, engaged in manipulating in the laboratory of the institution several hours each week.

The courses require a good collection of apparatus and specimens to carry them out, and this school is, in fact, better furnished than any other of its grade which I saw in Prussia, besides which, its collections are on the increase. The facilities for the courses are furnished by a collection of mathematical and physical apparatus, a labratory, with a tolerably complete chemical apparatus and series of tests, a collection of specimens of the arts and manufactures (or technological collection,) a collection of dried plants, and of engravings for the botanical course, and a small garden for the same use, a collection of minerals, a collection of insects, a collection in comparative anatomy, a series of engravings for the drawing course, and of plaster models, a set of maps, and other apparatus for geography, some astronomical instruments, and a library. The pupils are taken from time to time, to the admirable museum attached to the university of Berlin, for the examination of zoological specimens especially.

That this school is as a preparation for the higher occupations, and for professions not ranking among the learned, the equivalent of the gymnasium is clearly shown by the subjects and scope of its courses, and by the age of its pupils.

Some of these occupations require no higher instruction, others that the pupils shall pass to the special schools introductory to them. So also, many of the pupils of the gymnasia pass at once into active life, others enter the university.

The class of schools to which the two last described belong, are most important in their influence. In many countries, an elementary education is the limit beyond which those intending to enter the lower grades of the occupations enumerated in connection with the City Trade School of Berlin, do not pass; and if they are inclined to have a better education, or if intending to embrace a higher occupation, they desire to be better instructed, they must seek instruction in the classical schools. The training of these schools is, however, essentially different from that required by the tradesman and mechanic, the verbal character of the instruction is not calculated to produce the habits of mind in which he should be brought up, and the knowledge which is made the basis of mental training is not that which he has chiefly occasion to use. Besides, were the course ever so well adapted to his object, the time at which he must leave school only permits him to follow a part of it, and he is exposed to the serious evils which must flow from being, as it were, but half taught.

In fact, however, he requires a very different school, one in which the subjects of instruction are adapted to his destination, while they give him an adequate intellectual culture; where the character of the instruction will train him to the habits which must, in a very considerable degree, determine his future usefulness; and where the course which he pursues will be thorough, as far as it goes, and will have reached before he leaves the school the standard at which it aims. Such establishments are furnished by the real schools of Germany, and as the wants which gave rise to them there, are strongly felt every where, this class of institutions must spread extensively. In Germany they are, as has been seen, no new experiment, but have stood the test of experience, and with various modifications to adapt them to differences of circumstances or of views in education, they are spreading in that country. As they become more diffused, and have employed a greater number of minds in their organization, their plans will no doubt be more fully developed.

It is certainly highly creditable to Germany that its "gymnasia," on the one hand, and its "real schools" on the other, offer such excellent models of secondary instruction in its two departments. The toleration which allows these dissimilar establishments to grow up side by side, admitting that each, though good for its object, is not a substitute for the other, belongs to an enlightened state of sentiment in regard to education, and is worthy of the highest commendation.

DISTRIBUTION OF STUDIES IN THE CITY TRADE SCHOOL OF BERLIN.

	NO. OF HOURS PER WEEK.					
SUBJECTS OF INSTRUCTION.	First Class.	Second Class.	Upper Third Class.	Lower Third Class.	Fourth Class.	Total.
Religion,	1	2	2	2	2	9
German,	3	3	4	4	4	18
French,	4	4	4	4	4	20
English,	2	2				4
Arithmetic,	3	3	4	4	4	18
Geometry,	3	3	3	3	2	14
Geography,		2	2	2	2	8
History,	3	1				4
Natural History,	2	3	3	3	2	13
Physics,	3		2	2	2	9
Chemistry,		3	2	2		7
Technology,	4					4
Writing,			2	2	2	6
Drawing,	4	4	2	2	2	14
Vocal Music,	2	2	2	2	2	10
Total,	34	32	32	32	28	

In Prussia, every trade in which a want of skill may jeopard human life, is regulated by law; and before its exercise can be commenced, a license is required, to obtain which an examination must be passed. This requisition of the law is considered to involve a reciprocal obligation on the part of the government to afford the opportunity of obtaining the necessary knowledge, and schools have accordingly been established for the purpose. Twenty of the regencies of the kingdom already have technical schools established in them, where instruction is, in general, given at the expense of the state, or province, or for a very trifling remuneration; and it is the intention that each regency shall have at least one such school within its limits. When there is a burgher school in the place intended as the locality for one of these technical schools, the two schools are connected as already described: at Potsdam, the special technical course alone being given in a separate department. In all cases the government supplies the apparatus for the courses of mechanics, physics, and chemistry; furnishes the requisite engravings for the courses of drawing; and supplies works for the library and for instruction.

The most promising pupils from the provincial schools usually find places at the central Institute at Berlin, which is in fact the university of arts. There is a special school for ship-builders at Stettin, in Pomerania.

INSTITUTE OF ARTS OF BERLIN.

This institution is intended to impart the theoretical knowledge essential to improvement in the arts, and such practical knowledge as can be acquired to advantage in a school. It is supported by the government, and has also a legacy, to be expended in bursaries at the school, from Baron Von Seydlitz. The institution is under the charge of a director,* who has the entire control of the funds, of the admissions and dismissions, and the superintendence of the instruction. The professors and pupils do not reside in the establishment, so that the superintendence is confined to study hours. There are assistant professors, who prepare the lectures, and conduct a part of the exercises, in some cases reviewing the lessons of the professors with the pupils. Besides these officers there are others, who have charge of the admirable collections of the institution, and of the workshops, offices, &c. The number of professors is eight, and of repeaters, two. The discipline is of the most simple character, for no pupil is allowed to remain in connection with the institution unless his conduct and progress are satisfactory. There is but one punishment recognized, namely, dismission; and even a want of punctuality is visited thus severely.

In the spring of every year the regencies advertise that applications will be received for admission into the institute, and the testimonials of the candidates who present the best claims are forwarded to the director at Berlin, who decides finally upon the several nominations. The pupils from the provincial schools have, in general, the preference over other applicants. At the same time notice is given by the president of the Society for the Promotion of National Industry, in relation to the bursaries vacant upon the Seydlitz foundation. The qualifications essential to admission are—to read and write the German language with correctness and facility, and to be thoroughly acquainted with arithmetic in all its branches. The candidate must, besides, be at least seventeen years of age. Certain of the pupils, as will be hereafter more fully stated, require to have served an apprenticeship to a trade. The Seydlitz bursar must, in addition, show—1st. That their parents were not artizans,* relatives of the founder having the preference over other applicants. 2d. That they have been apprenticed to a trade, if they intend to follow one not taught in the institution. 3d. They must enter into an engagement that if they leave the mechanical career they will pay back the amount of their bursaries. There are sixty or seventy gratuitous pupils in the school of whom eighteen are upon the Seydlitz foundation. Forty are admitted annually, this number having been adopted because it is found that, in the course of the first month, about a fourth of the newly admitted pupils fall away from the institution. Each bursar receives two hundred and twenty-five dollars per annum for maintenance. The education is gratuitous. The regular pupils enter on the first of October, but the director is authorized to admit, at his pleasure, applicants who do not desire to become bursars, but who support themselves, receiving gratuitously, however, the instruction afforded by the institution.

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* The director, M. Beuth, is also president of the Royal Technical Commission of Prussia, and has the distribution of the funds for the encouragement of industry, amounting to about seventy-five thousand dollars annually. M. Beuth is also a privy counsellor, and is president of the Society for the Encouragement of National Industry in Prussia.

The education of the pupils is either solely theoretical, or combines theory and practice, according to the calling which they intend to follow. The first division is composed of students, who receive theoretical instruction only, and who are preparing to become masons, carpenters, and joiners. They are supposed to have become acquainted with the practice of their trade before entering the institution, being required to have served, previously, a part of their apprenticeship. An excellent reason is assigned for this rule, namely, that on leaving the school such pupils are too old to begin their apprenticeship to these callings, and would, if they attempted to do so, find the first beginnings so irksome as to induce them to seek other employments, and thus their special education would be lost, and the object of the school defeated. The second division embraces both theoretical and practical instruction, and consists of three classes. First, the stone-cutters, engravers, lapidaries, glass-cutters, carvers in wood and ivory, and brass-founders. Second, dyers and manufacturers of chemical products. Third, machine-makers and mechanicians. The practical instruction is different for each of these three classes.

The general course of studies last two years, and the pupils are divided into two corresponding classes. The first class is, besides, subdivided into two sections. The lower or second class is taught first; mechanical drawing, subdivided into decorative drawing, including designs for architectural ornaments, utensils, vases, patterns for weaving, &c., and linear drawing, applied to civil works, to handicrafts, and to machines. Second, modelling in clay, plaster, and wax. Third, practical arithmetic. Fourth, geometry. Fifth, natural philosophy. Sixth, chemistry. Seventh, technology, or a knowledge of the materials, processes, and products of the arts. The studies of the lower section of the first class are general, while those of the first section turn more particularly upon the applications of science to the arts. In the lower section, the drawing, modelling, natural philosophy, and chemistry, of the first year, are continued; and, in addition, descriptive geometry, trigonometry, stereometry, mixed mathematics, mineralogy, and the art of construction are studied. In the upper or first section, perspective, stone-cutting, carpentry, and mechanics applied to the arts, are taught, and the making of plans and estimates for buildings, workshops, manufactories, machines, &c. These are common to all pupils, whatever may be their future destination; but beside them, the machinists study, during the latter part of their stay at the institution, a continuation of the course of mechanics and mathematical analysis. The examples accompanying the instruction in regard to plans and estimates are adapted to the intended pursuits of the pupils.

The courses of practice are begun by the pupils already enumerated as taking part in them, at different periods of their stay in the institution. The future chemists and mechanics must have completed the whole range of studies above mentioned, as common to all the pupils, while the others begin their practice after having completed the first year's course. There are workshops for each class of pupils, where they are taught the practice of their proposed calling, under competent workmen. There are two foundries for bronze castings, one for small, the other for large castings, and the work turned out of both bears a high character. A specimen of this work is retained by the institution in a beautiful fountain, which ornaments one of the courts of the building. The models for castings are made in the establishment. In the first division of pupils, in reference to their callings, there are usually some whose art is connected with the fine arts in some of its branches, and these have an opportunity during part of the week to attend the courses of the Berlin Academy. The future chemists work for half the year in the laboratory. They are chiefly employed in chemical analysis, being furnished with the requisite materials for practice by the institution. In the shops for the instruction of mechanics are machines for working in wood and the metals, a steam-engine of four horses' power, a forge, tools in great variety, lathes, &c. The pupils have the use of all necessary implements, according to their progress, and are gradually taught, as if serving a regular apprenticeship. When capable, they are enable to construct machines which may be useful to them subsequently, as a lathe, or machine for cutting screws, or the teeth of wheels, &c., and are furnished with all the materials for the purpose, the machine becoming their own property. In these workshops, also, the models for the cabinet of the school are made. This is by far the most complete establishment for practice which I met with in any institution, and I believe the practice is both real and effectual. It involves, however, an expenditure which in other cases it has not been practicable to command. The scale of the whole institution is, in the particular of expenditure, most generous.

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* The object of M. Von Seydlitz appears to have been to counteract, to the extent of his power, the tendency to the increase of the learned professions, at the expense of the mechanic arts, by an inducement to a course exactly contrary to the usual one.

This is one specimen of the various plans which have been devised to give practical knewledge of an art in connection with theory in a school. It is first most judiciously laid down that certain trades can not be taught to advantage in a similar connection, but that the practical knowledge must be acquired by an apprenticeship antecedent to the theoretical studies. There are besides, however, a large number of trades, the practice of which is to be taught in the institution, and requiring a very considerable expenditure to carry out the design properly. This could not be attempted in a school less munificently endowed, and requires very strict regulations to carry it through even here. The habits of a school workshop are, in general, not those of a real manufactory, where the same articles are made to be sold as a source of profit; hence, though the practical knowledge may be acquired, the habits of work are not, and the mechanic may be well taught but not well trained. At the private school of Charonne, workshops were established, giving a variety of occupation to the pupils; but the disposition to play rather than to work, rendered these establishments too costly to be supported by a private institution, and the plan adopted instead of this, was to make the pupils enter a regular workshop for a stated number of hours, to work for the proprietor or lessee. This plan remedies one evil, but introduces another, that as the machinist takes orders, with a view to profit, the work may have so little variety as only to benefit a small class of the pupils. The pupils at Charonne are, however, under different circumstances from those at Berlin; they are generally younger, and, being independent of the school, where they pay for their education, are not under the same restraint as in the other institution; hence the experience of the one school does not apply in full force to the other. At Dresden, in a school somewhat similar to that of Berlin, a different mode from either of those just mentioned has been adopted. An arrangement is made with a number of mechanics, of different occupations, to receive pupils from the schools as apprentices, allowing them the privilege of attending, during certain specified hours of the day, upon the theoretical exercises of the institution. Where such an arrangement can be made, the results are unexceptionable, and the advantages likely to accrue to the mechanic arts, from the union of theory with practice, will offer a strong inducement to liberally disposed mechanics to take apprentices upon these terms. Small workshops, connected with an institution, must necessarily offer inferior advantages, even if closely regulated, so as to procure the greatest possible amount of work from the pupils; this should not be done for the sake of the profit, but to give him genuinely good habits.

The difficulties in giving practical instruction in the chemical arts are not to be compared with those under discussion, and will be found to have been satisfactorily obviated in several schools. This subject will receive its more appropriate discussion in connection with the polytechnic institution of Vienna, where the chemical department, at least as far as manufacturing chemistry is concerned, is generally recognized as having produced the best results of any yet established.

Returning to the subject of the theoretical instruction in the Berlin institute of arts, the following statement will serve to show the succession of the course, with the time devoted to each:

WINTER COURSE.

MONDAY.

First Class. First division—drawing and sketching machines, eight A. M. to twelve o'clock. Discussion of machines, estimates of power, &c., two P. M. to five P. M. Second division—machine drawing, eight to ten. Modelling in clay, ten to twelve. Physics, two to five.

Second Class. Machine drawing, eight to ten. Modelling, ten to twelve. Elements of geometry, two to four. Repetition of the lecture, four to five.

TUESDAY.

First Class. First division—architectural plans and estimates, eight to twelve. Practical instruction in machinery, two to five. Second division—ornamental and architectural drawing, eight to twelve. Trigonometry, two to five.

Second Class. Ornamental and architectural drawing, eight to twelve. Physics, two to four. Repetition of the lecture, four to five.

WEDNESDAY.

First Class. First division—original designs, eight to twelve. Discussion of machinery. Second division—mineralogy, eight to nine. Machine drawing, nine to twelve. Trigonometry, two to five.

Second Class. Machine drawing, eight to twelve. Practical arithmetic, two to five.

THURSDAY.

First Class. First division—drawing and sketching machines, eight to twelve. Architectural instruction, estimates, two to five. Second division—decorative and architectural drawing, eight to ten. Modelling in clay, ten to twelve. Trigonometry, two to five.

Second Class. Decorative and architectural drawing, eight to ten. Modelling in clay, ten to twelve. Physics, two to four. Repetition of the lecture, four to five.

FRIDAY.

First Class. First division—architectural plans, eight to twelve. Practical instruction in machinery, two to five. Second division—machine drawing, eight to twelve. Physics, two to five.

Second Class. Machine drawing, eight to twelve. Elementary mathematics, two to four. Repetition of the lessons, four to five.

SATURDAY.

First Class. First division—perspective and stone-cutting, eight to twelve. Original designs, two to five. Second division—mineralogy, eight to nine. Decorative and architectural drawing, nine to twelve. Trigonometry, two to five.

Second Class. Decorative and architectural drawing, eight to twelve. Practical arithmetic, two to five.

The summer term, which follows this, embraces the practical instruction.

SUMMER TERM.

MONDAY.

First Class. First division—in the workshops from seven A. M. to twelve, and from one until seven P. M. Second division—machine drawing, eight to twelve. Applied mathematics, two to five.

Second Class. Machine drawing, eight to ten. Modelling, ten to twelve. Chemistry, two to four. Repetition, four to five.

TUESDAY.

First Class. First division—analytical dynamics, eight to nine. Drawing of machines from original designs, nine to twelve. Machinery, two to five. Second division—decorative and architectural drawing, eight to twelve. Chemistry, two to five.

Second Class. Decorative and architectural drawing, eight to twelve. Elementary mathematics, two to four. Repetition, four to five.

WEDNESDAY.

First Class. First division—in the workshops from seven to twelve, and from one to seven. Second division—machine drawing, eight to ten. Modelling, ten to twelve. Applied mathematics, two to five.

Second Class. Machine drawing, eight to twelve. Practical arithmetic, two to four. Materials used in the arts, four to five.

THURSDAY.

First Class. First division—in the workshops from seven to twelve, and from one to seven. Second division—machine drawing, eight to ten. Modelling, ten to twelve. Applied mathematics, two to five.

Second Class Decorative and architectural drawing, eight to ten. Modelling, ten to twelve. Chemistry, two to four. Repetition of the lesson, four to five.

FRIDAY.

First Class. First division—analytical dynamics, eight to nine. Drawing of a machine for an original design, nine to twelve. Machinery, two to five. Second division—chemistry, eight to nine. Applied mathematics, nine to twelve. Chemistry, two to five.

Second Class. Machine drawing, eight to twelve. Elementary mathematics, two to four. Repetition of the lesson, four to five.

SATURDAY.

First Class. First division—in the workshops, from seven to twelve, and from one to seven. Second division—decorative and architectural drawing, eight to twelve. Applied mathematics, two to five.

Second Class. Decorative and architectural drawing, eight to twelve. Practical arithmetic, two to four. Materials used in the arts, four to five.

The chemical division of the practical classes is engaged every day in the laboratory. On Tuesday and Wednesday, the library is open for reading from five to eight, P. M.

The collections for carrying out the various branches of instruction are upon the same liberal scale with the other parts of the institution. There is a library of works on architecture, mechanics, technology, the various arts, archeology, &c., in German, French and English. This library is open twice a week, from five to eight in the evening, to the pupils of the first class of the school, and to such mechanics as apply for the use of it.

There is a rich collection of drawings of new and useful machines, and of illustrations of the different courses, belonging to the institution. Among them is a splendid work, published under the direction of Mr. Beuth, entitled Models for Manufactures and Artisans, (Vorlegeblätter for Fabricanten and Handwerker,) containing engravings by the best artists of Germany, and some even from France and England, applicable to the different arts and to architecture and engineering. Among the drawings are many from original designs by Shenckel, of Berlin. There is a second useful but more ordinary series of engravings, on similar subjects, also executed for the use of the school. These works are distributed to the provincial trade schools, and presented to such of the mechanics of Prussia as have especially distinguished themselves in their vocations. The collection of models of machinery belonging to the school probably ranks next in extent and value to that at the Conservatory of Arts of Paris. It contains models of such machines as are not readily comprehended by drawings. Most of them are working models, and many were made in the workshops of the school. They are constructed, as far as possible, to a uniform scale, and the parts of the models are of the same materials as in the actual machine. There is an extensive collection of casts, consisting of copies of statues, basso-relievos, utensils, bronzes, and vases of the museums of Naples, Rome, and Florence, and of the British Museum, and of the models of architectural monuments of Greece, Rome, Pompeii, &c., and copies of models, cameos, and similar objects; those specimens only have been selected which are not in the collection of the Academy of Fine Arts of Berlin, to which the pupils of the Institute of Arts have access. There are good collections of physical and chemical apparatus, of minerals, of geological and technological specimens.

The instruction is afforded in part by the lectures of the professors, aided by text-books specially intended for the school, and in part by the interrogations of the professors and of the assistants and repeaters. At the close of the first year there is an examination to determine which of the pupils shall be permitted to go forward, and at the close of the second year to determine which shall receive the certificate of the institute. Although the pupils who come from the provinces are admitted to the first class of the institute, upon their presenting a testimonial that they have gone through the course of the provincial schools satisfactorily, it frequently happens that they are obliged to retire to the second, especially from defective knowledge of chemistry.

The cost of this school to the government is about twelve thousand dollars annually, exclusive of the amount expended upon the practical courses and upon the collections—a very trifling sum, if the good which it is calculated to do throughout the country is considered.

II. PUBLIC INSTRUCTION IN SAXONY.

BY HERMANN WIMMER, PH. D.

The public schools of Saxony may be divided into "*Volksschulen*," i e., people's schools or common schools, and "*Gelehrte Schulen*," literally, learned schools.

The Volksschulen comprise, 1, village schools; 2, burgher schools; 3, normal schools; 4, higher burgher schools or real schools; 5, industrial schools, culminating in 6, polytechnical schools, which include the academy for miners in Freiberg; academy for agriculture and forest concerns in Tharand; academy of arts and polytechnic in Dresden, etc.

The Gelehrte Schulen embrace the gymnasia, with the progymnasia, and the university in Leipzig. These are called, also, "*Hochschule*," i e., high schools.

In another sense the public schools are divided into (*a*,) *niedere*, (i e., lower,) *volksschulen*, or simply *volksschulen*, viz., village schools, common burgher schools, (with the teachers' seminary at the head;) (*b*,) *mittelschulen*, middle schools, viz., real schools or higher burgher schools; industrial schools; gymnasia; and (*c*,) high schools or academies, viz., the university, the polytechnical school, and other professional academies.

We shall view the schools in the order mentioned first.

1. COMMON SCHOOLS.*

1. Village schools, (*dorfschulen*.) They are attended by the children of the parish from their sixth year of age, when they become *schulpflichtig*, (i e., due to school by law,) to the fourteenth or fifteenth year,—full eight years,—in which they are, after three to six months' instruction in religion by the parish clergyman, "confirmed" as Christians, and, after that, for the first time, admitted to the Lord's Table. This act implies dismission from school, which takes place a few days before or after the confirmation. The children of the clergyman are generally educated by himself at home; those of the "gentlemen," first by a governess, then by a tutor or in a boarding school. In larger villages or small towns, where there are more families of some rank, a little private school is frequently established by them and kept by a candidate of theology, or a candidate for the *schulamt*, (i e., school office, employment;) or a graduate of the normal school; rarely by a candidate of the higher "schulamt," or graduate of the university, who has passed his examination for teaching in gymnasia, real schools, etc. By the *common school law* of Saxony, drawn by the late Dr. Schulze in Dresden, and passed in 1835,*

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* *Das Elementar-Volksschulgesetz fur das Konigreich Sachsen, nebst Verordnung vom Juni* 1835, *von Dr. G. Schulze*, Dresden, 1835. pp. 236. For the law see p. 32. The ministerial ordinance belonging to it, pp. 117. Its appendix includes Pedagogical literature, School

the village schools since then, are divided into two separate classes, of which the higher is generally instructed in the forenoon, (7–11;) the lower in the afternoon,) 1–4, except Wednesdays and Saturdays, when there is no school in the afternoon, and the two classes are successively instructed during two hours each in the forenoon. If there are more than one hundred and twenty children, sixty to each class, an assistant teacher must be appointed.[*]

Attendance is enforced by law, (by fine,) and the teachers are obliged to deliver, at the end of every month, a list of non-attendants to the school committee. The latter consists of the parish clergyman, called local school inspector, the magistrate of the village or town, and at least two more elected parishioners or councilmen. Of course the clergyman is the chief inspector and visitor. But he is also in this quality subordinate to the "Superintendent" or ecclesiastical superior of the district, who is, at the same time, chief minister in the largest town of a certain section, and inspector of all churches and schools in that district. The higher boards are the "*Kreisdirection*," i e., government of the circle, (Dresden, Leipzig, Bautzen, Zwickau,) presided over by the church and school councilor attached to it; and after that, the ministry of ecclesiastical affairs and of public instruction, and especially the privy church and school councilor, charged with the common schools.

The school money paid by the parents of each child attending school, is, lawfully, one groschen a week, but in many cases reduced to one-half or two-thirds. This amount will be increased by the present law. Since a regular compensation has been settled on the teacher, this school money is collected by the village, and the teacher paid out of the school funds of the parish. In a village with a church, and, in former days, only such had a public school, the schoolmaster is, at the same time *cantor*, (*chorister*,) organist, sexton, and, in such quality has, besides his free dwelling in the school house, (which he has in all cases,) the use of some land, some money from every house in the parish, some income from marriages, baptisms, funerals, etc., and, in former times, other emoluments, as loaves of bread, billets of wood, &c. But these are now all settled in money. Good places are worth from four to five hundred thalers; the best, perhaps, seven hundred. The lawful minimum is one hundred and fifty thalers, increasing after every fifth year, and raised from time to time by

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houses and school-rooms, with four cuts; female handwork; Sunday Schools; infant school; school tables and registers; index. Many German states, as Prussia, have no such law yet; but a collection of decrees, ordinances or regulations. In Prussia, the three regulatives of Oct. 1854, are the last and the most remarkable.

[*] In Prussia, a great many schools, especially in the province of Saxony, have had the same departments which had been in use in many of our schools a long time before 1835, but others, as well here as there, were one-classed schools, where all the children attended together during all-school time. It was proposed by many influential men, e. g., by Goltsch, principal of the normal school in Stettin, to establish in Prussia too, throughout, two classes, but in the regulatives, the minister says that he has no reason to make any change, but that he wishes all children to attend together in one room. This, therefore, is henceforth, (i e., until recalled by some other regulative,) to be considered as the legal rule in Prussia, and all new school-houses must be built with a room large enough to accommodate all children.

law. Since money is rapidly increasing in value, the fixed sum is no longer equivalent to what it was fixed for, nor to the wants of daily life; hence the "*Lehrernoth,*" i e., want of teachers, (active and passive,) is fast increasing, but more so in other parts of Germany; as in Prussia.

The schoolmaster, like the clergyman, is appointed either by the government, or, where a manor exists, by the lord of the manor; but, when once appointed, can not be removed unless for a flagrant crime against morality or government.

Religion, reading, writing, and arithmetic, are the principal objects of instruction. Geography and history are commonly confined to the knowledge of Saxony and Germany. This, as well as the scanty instruction in the fields of nature, is generally got from the Reader. Reading is taught by the "*Lautirmethode,*" writing by copies, (by the blackboard,) or in connection with reading; arithmetic by a combination of slate and mental arithmetic.

In former times the school was almost exclusively in the parish village; the children of other villages had to walk to that parish school. But, fortunately, this has been altered, in the most urgent cases, by building by-schools, *nebenschulen*. In such villages as have become too extensive, two or three miles long, another school is established at the side most distant from church and school.

The school year commences the Wednesday after Easter, with vacations, at Whitsuntide of three days, at Easter and at Christmas of eight days, and about two weeks in harvest time. There is no difference between winter and summer schools, as in many villages of Prussia.

2. BURGHER SCHOOLS or town schools, (*burgerschulen*, *stadtschulen.*) These are divided into boys' and girls' schools, and each of them in smaller towns into three or four separate classes, instructed by the rector or principal, by the cantor, organist, sexton and other teachers. Larger towns, such as Dresden, have as many burgher or ward schools as are wanted in proportion to their extent, with a great number of teachers that have no connection with the church, but are under the inspection of the clergyman. Here, especially in smaller towns, the class system exists to its fullest extent; that is the rector is the only teacher of the first class, the cantor of the second, etc. In the larger towns, with more than three classes and teachers, teaching according to branches is practiced to some extent; that is, a certain teacher gives instruction in geography and history in all, or at least the higher classes.*

Boys and girls are generally mixed in the elementary class, and, though they are, after that, separated in different schools, the rector is nevertheless principal of the girls' school also. Sometimes, with a large number of pupils, parallel classes are established. *Leipzig*, with about 40,000 inhabitants, had, at first, owing to the small compass of the city, one burgher school with many separate classes for boys and girls. The increase of population, (70,000,) and of houses, then caused the erection of a second burgher school, with a vice-principal. This possible concentration of the burgher school in a wealthy and intelligent town, together with the great merits of Dr. Vogel, well seconded by a liberal council, which permitted the permanent employment of graduates of the university, caused its high standing. Since then, a third burgher school has been founded with an independent principal, and a fourth will, before long, follow. The school rate is highest in the first burgher school. Besides, there exist two municipal poor schools, (*armenschulen*.) *Dresden*, with 108,000 inhabitants, has, besides four poor schools, three burgher and five district or ward schools; (the school rate making the chief difference,) all of them nearly equal.

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* Nowhere, not even in the higher institutions, where the class system prevails to a greater extent, except the university, is it applied to such a degree as, e. g., in the High School of Philadelphia.

Most of the teachers in the burgher schools, and all those in the village schools are graduates from the normal schools.

The legal school time is here, as elsewhere, eight years. Private instruction at home or in schools is allowed, but no one, except such as are prepared for teaching, (i e., clergyman or teacher,) is permitted himself to teach his children without the help of the school or a proper master.

Methodology is most advanced in these schools. For, in general, it may be said that pedagogy, or the art of teaching, has been investigated and improved, especially in and for the common schools, among which the village schools can not have either a full sway nor the best men; whilst, on the other hand, teaching in the higher institutions, either based on the indelible source of formal instruction, the classics, as in the gymnasia, or destined to the acquisition of real and positive knowledge, neither needed the same degree of efforts in this respect, nor even admitted such essential changes as the common school teaching has passed through. The normal schools have been, in modern times, the foci of pedagogical improvement, whereas the universities, where the rest of the teachers are educated, with all their seminaries and professors of pedagogy, offer more of literal and scientific than of pedagogical education. All this I have said in appreciation of the pedagogical progress in common schools and of the normal schools, not to the disparagement of our excellent institutions of a higher grade; and, it may be remembered, that nearly all teachers of the normal schools, as well as most of the leaders in our pedagogical literature are graduates of the gymnasia and universities.

8. THE NORMAL SCHOOLS, or teachers' seminaries. Of these, two are in Dresden, and one each in Plauen, Grimma, Annaberg, Bautzen, Nossen instead of Freiberg, in all seven. They are now all internates or boarding schools, in former times partly day schools. For admission, once a year, such a preparation is needed as is not required in a common burgher school; hence "Pro-seminaries" of a half private character, are generally established in connection with the normal school. The course comprises four years. Besides religion, music is an essential branch, as it is needed by a country teacher who is attached to a church, as most are, and all wish to be, since he leads the choir, plays on the organ, etc. The teacher-pupils rise at five; in winter at half past five; and go to

bed at half past nine or ten. The lesson or study hours are, 5-6,11-1, (12-2,) and two hours in the evening; once a week a common walk with one of the teachers. Permission to go out is very rarely given, and only in those hours, but never after supper. The pupils of the two lower classes are not permitted to give private lessons, and the others but exceptionally, and in case of great ability and dignity. Prayer in the morning and evening, particularly so on Monday morning, in presence of all teachers and pupils, including the children of the school of practice.

Branches of instruction: 1, religion, in connection with 2, catechetics; 3, German; 4, geography and history; 5, natural philosophy and history; 6, arithmetic; 7, elements of geometry; 8, pedagogy; 9, penmanship; 10, drawing; 11, gymnastics; 12, music. But of the branches taught until 1857, no time is henceforth to be allotted to Latin and logic; no particular time to psychology, common school knowledge, and methodics; which are to be connected with pedagogy and practiced in the *seminarschule* or school of practice. The teachers of the normal school, obliged to twenty-six hour lessons a week, are, at the same time, teachers of the school of practice, (in two or three classes, with no more than forty or fifty in each class,) together with the pupils of the two upper classes exclusively, and in presence of a teacher.

Vacations: three weeks in summer, in dog-days; and one week at the three great festivals, (Easter, Whitsuntide, Christmas.) The study hours of the evening must be devoted to a *review* of the day's lessons; those of Saturday to a review of the week's lessons; and the teachers have to review with the pupils, not only at the close of any convenient section, but regularly at the end of every month.

A normal school for *female* teachers has been lately established in Callenberg, (by the munificence of the prince of Schoenburg, the same who has founded before the female normal school in Droissig, in the Prussian province of Saxony,) and admits young ladies of seventeen to twenty-five years of age. The length of the course is not yet fixed. Families and principals of private schools are allowed by government to employ the graduates of that school: the former, (the families,) for educating their children until the tenth year of age, without distinction of sex, in all branches; but from the 10th year, only for their *girls*, in all branches, excluding religion. The latter, (private schools,) may employ them only for teaching their *female* pupils in the lower and middle class, and in the latter class with the exception of religion. Whether and to what extent they may be employed in public schools, (i e., either in girl schools, or in elementary classes of mixed schools,) will be later determined by our government, after some more observation and experience. I may add here, that, in some districts of Prussia the government has been compelled, by want of teachers, to establish normal courses of *one* year, instead of the usual three.

4. Real Schools, (higher burgher schools.) These are of a relatively new date. Formerly, all boys of the middle classes in towns,

with the means needed for a better education, were sent to the old Latin schools; more recently to the lower gymnasium, (Quarta and Tertia, with the progymnasium or Sexta and Quinta,) and were equally instructed with such boys as had to acquire a classical education for professional studies in the university. Peace and the increase of wealth, together with the increased demand for an education in modern languages and mathematics, called forth the frequent establishment of these schools, (corresponding to the English "high schools.") Where an actual real school was not yet possible, parallel classes were joined to the gymnasiums. In these the first real class corresponds to the second class in the gymnasium. Instead of Latin and Greek, other branches are more particularly taught,—some in common.

Even in Saxony, the real schools are of a somewhat different stamp and standing; but all have the same object, of giving a higher education to such as do not want a classical education. In some modern languages, i e., French and English, prevail more than in others; but German, mathematical and natural knowledge, history, geography, and drawing, are essential branches in all. These schools have no systematical connection with the burgher schools, as has, *e. g.*, the Free Academy in New York. They admit boys of all ages and towns, if they pass the examination, which requires a good elementary education. But this point has been often reached by boys of good family, with the help of private tuition, at the eleventh year, as well as by others at the fourteenth. This was, at least, the case hitherto, and a boy destined for a higher education is expected to be early in advance of his common school brethren of the same age. For this purpose schools of a higher aim have generally preparatory classes, so that many gymnasiums are frequented even by boys of eight years in a fifth or sixth class, whilst the gymnasium contains properly but four classes.

The real school in Leipzig is divided into four classes, the last of which comprises boys of eleven to fourteen years. Other real schools go further down, and thus serve as common schools. The complete Prussian real schools have six classes, even with a two years' course in the highest. There has been, as yet, much experimenting with this sort of schools, or, rather, in every state, province, or town, that organization has been adopted which seemed best according to the views of the chief founder, or best adapted to the wants of the inhabitants, or, under unfavorable circumstances, the only practicable one. In Prussia the Latin has been retained, (in some schools only in the lower classes;) in other states, (Saxony,) it is entirely superseded by French and English; in Austria neither is Latin taught, nor is French or English obligatory; and mathematical, technical, (drawing,) and natural knowledge are the chief points.

The real schools are, generally, a part of the burgher school system in the towns, and hence supported by the school money paid by the pupils, and if that does not cover the expenses, by the municipal council. Only when they are a collateral branch of a royal gymnasium, do they stand immediately under the government.

The "*hohere tochterschulen*," (higher girls' schools,) are co-ordinate to the real schools, though rather rare as yet, and established only by wealthy municipalities or by private enterprise.

There is another class of schools which come very near the real schools, though they have a more professional denomination. I mean the *commercial schools*, *handelsschulen*. In all of them modern languages, with letter writing, arithmetic, book keeping, laws of exchange, etc., are the chief branches. The two largest are in Leipzig and Dresden, partly preparatory, aiming at the same higher education for which the real schools are founded, and partly for mercantile apprentices, who are, by the recent resolution of the corporation of merchants (in Dresden, etc.,) which founded and supports the school, obliged to attend, during their apprenticeship, (generally four years,) for several hours a day. Smaller towns, e. g., Zwickau, Grimma, etc., follow the example, and have imposed the same obligation. Many or most boys of the real school, e. g., in Leipzig, are preparing, too, for a mercantile pursuit.

5. INDUSTRIAL SCHOOLS, *gewerbschulen*. There are technical institutions, preparing for mechanical and chemical trades, commonly with the addition of a school for journeymen masons, and carpenters, architectural,) and also for journeymen, i e., such as have finished their apprenticeship in other trades, (millers, dyers, tanners, etc.) The lower classes are attended also by such as want a real education of a more general kind, (German, French, drawing, mathematical and natural science.)

We have had such schools in the industrial districts of Saxony, (Chemnitz, Plauen, Zittau,) but by far the best, and now, I hear, the only one, in the first named greatest industrial town of Saxony, (for machine building, cotton weaving, dyeing, hosiery, etc.,) which, on this account, has no real school. Drawing, chemistry, and machine building, are the chief branches, with an agricultural department. The school has two collateral courses, of which the one is for machinists, and has one class more than the other, which is for chemistry, (agriculturalists,) etc.*

The industrial schools of Prussia have a lower standing and somewhat different organization: the real schools of Austria, with their technical character, are somewhat similar.

It must be mentioned in this place, that our *Sunday Schools*, established in most towns, are for apprentices and journeymen, and to afford a more practical education. Hence they are essentially drawing schools.

Besides, we have, in the mountainous districts about Chemnitz, Annaberg, etc., a considerable number of schools for *lace making*, lately improved and increased by government. But I am not aware that many industrial schools of this kind, though they abound in Belgium, do exist in Saxony for any other manufacture. *Freiberg* has a *sewing school*, with one hundred and twenty girls, from the seventh year upward; yearly income four hundred thalers. And a straw working school, with one hundred and eighty children from the fifth year of age, (two-thirds boys,) who earn five or six groschen a week,—both supported by the "*Frauenverein*," ("female association.")

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* For the plan of lessons see American Journal of Education, Vol. IV., No. 10, p. 252.

Improvement in agricultural concerns is cared for by economical associations of the various districts, (exhibitions, etc.,) which I should not mention here, if they had not made a beginning in influencing the schools by establishing, in connection with some village schools, additional lessons in natural knowledge, granting physical apparatus, etc.

Arboriculture and horticulture have been taught hitherto in many village schools, and should be in all.

6. THE POLYTECHNICAL SCHOOL. Besides the polytechnic school, properly so called, (for engineering of all sorts and chemistry,) it comprises an architectural school, (*baugewerkenschule*,) and a school for drawing and clay modeling, (*zeichnen und thonmodelliren*.) The lessons of the last division are exclusively devoted to these branches; in two sections, with two teachers, (from eight to twelve and two to six;) those of the architectural school in three classes, (*repetenten*, higher and lower,) comprise:—ornamental and architectural drawing, architecture, doctrine of projection, perspective, machinery, mathematics, German, natural philosophy, carpentry, masonry, and engraving, (lessons from eight to twelve and two to four, of two hours each,) with seven teachers.

The proper school consists of a lower, (three classes,) and a higher division, (two classes,) the latter of which is the highest technical academy in Saxony, with twenty-one teachers. In the lower division (from eight to twelve and two to six; with from seven to eight in the morning, on most days, for French and English.) The studies are German, French, English, algebra, stereometry, analytical geometry, experimental physics, mechanics, mineralogy, projecting, theoretical and technical chemistry, engraving, (*steinschnitt*,) mechanical technology, perspective, general architecture, ornamental and architectural drawing. In the afternoons of most days, surveying, projecting of parts of machines, and chemical exercises in the laboratory.

In the higher division: (from eight to twelve and from two to six; and on four days also from twelve to one for English;) the studies are higher mathematics, physics, practical economy, book keeping, English; projecting of machines, mechanical technology, mechanics, astronomy, geodesy, building of bridges, etc.; geognosy, drawing, chemical exercises. There are, at present, in the higher division about twenty students; in the lower about sixty. The architectural school has eighty-three, and the drawing school thirty-one pupils.

7. THE MINING ACADEMY in Freiberg, (founded November 13th 1765,) with fifty students from Saxony, fifty more from the other German states, and twenty-seven from all parts of the world, viz., seven from England, seven from the United States, two from Chili, one from Mexico, one from New Granada, one from Cordova in South America, one from Smyrna, one from Florence, one from France, one from Belgium, one from Servia, one from Moscow, one from Warsaw, one from Lemberg,—one hundred

and twenty-seven in all, more than ever before,—with ten professors, (Breithaupt, Scheener, Plattner, Cotta, junior, etc.)

8. THE ACADEMY FOR AGRICULTURE AND FOREST concerns in Tharand near Dresden, a well known school of good reputation, (Cotta,) with about one hundred students of various nations.

9. THE ACADEMY OF ARTS in Dresden, (Schnorr, Bendemann, Rietschel.)

10. THE MUSICAL OBSERVATORY in Liepzig, (Mendelssohn.)

11. THE SURGICAL ACADEMY in Dresden, training surgeons for the army, and "*medicinae practicos;*" but not doctors of medicine. These must have studied their medical (and surgical) course in the university.

12. THE ARCHITECTURAL SCHOOLS, in connection with the polytechnical school in Dresden, and with the industrial school in Chemnitz.

III ORGANIZATION AND INSTRUCTION

OF

BURGHER SCHOOL IN LEIPSIC, SAXONY.

In Leipsic the public primary schools are of three sorts, the first for the use of the children of the poor who receive supplies from the public; the second for those who, not belonging to this class, would still be burthened by the payment of a school fee; the third, the burgher class. Many of the schools are endowed. The Burgher school is considered by Dr. Bache one of the most complete in its plan of organization in Germany. He thus describes it:

This school is designed to educate children of the middle ranks of society, and those of the upper ranks whose parents wish them to receive a public education.

It is composed, 1st. Of an *elementary school* for both boys and girls, which pupils should enter at six years of age. There are three classes, in the lowest of which the two sexes are taught in the same room. The pupils are retained, in general, a year and a half to two years, leaving this department at eight years of age and proceeding to the next higher.

2d. The *burgher school* proper. Here the boys and girls receive instruction separately. There are six classes for boys, each of which occupies a year. After passing through the three lower classes, the sixth, fifth, and fourth, the pupils begin separate courses, according to their inclination or supposed destination in life. This is at about eleven years of age. Those who are intended for trades, and whose school education must finish at fourteen, to enable them to begin their apprenticeship, pass through the remaining classes, the third, second, and first of the burgher school.

Other boys who are intended to pursue higher departments of mechanical occupations, or for manufacturers, clerks, miners, foresters, stewards of estates, merchants, artists, civil officers, &c., pass into the department called the "*real school*," terminating their course there at about sixteen years of age. Others who are intended for the learned professions go at eleven to a gymnasium, pass through its classes at eighteen, and enter the university, being prepared for a profession at twenty-one.

3d. The "*real school*" or higher burgher school. In this there are four classes, intended to occupy together about five years, and to prepare the pupils to enter a commercial, polytechnic, architectural, or mining academy, according to his vocation.

Omitting the girls' school, the scheme thus marked out will appear better by the following skeleton :

ELEMENTARY SCHOOL.—Three classes. Pupils 6 to 8 years of age.

BURGHER SCHOOL.—Three classes. Pupils 8 to 11 years of age.

HIGHER BURGHER SCHOOL.—Three classes. Pupils 11 to 14 years of age. The pupils are apprenticed on leaving the school. Or,

REAL SCHOOLS of four classes. Pupils 11 to 16 years of age, and pass to a *polytechnic*, *commercial*, *mining*, *architectural*, *&c.*, *academy*. Or,

GYMNASIUM (grammar school) of six classes. Pupils 11 to 18 years of age. They pass to the *university*, where, after a course of three years, they may be admitted to one of the learned professions.

A plan at once convenient and rational is thus marked out for a youth's education, depending upon the views of his parents, their circumstances, and his own talents and dispositions. The first four named schools are united in one building, erected by the liberality of the town of Leipsic, and have the same director.

The subjects and the order of succession of the different courses are good ·

there is a constant reference to the ultimate object of the instruction, and no branches are inserted in the programme merely for the purpose of preparing pupils for the higher classes of other schools. It is, on the contrary, considered better that pupils should obtain access to them through the lower classes of the same school. By detaining them here, injury would be done to both schools. The primary instruction which is common to all the pupils, embraces a moderate number of branches, and terminates at an age when experience has shown that the culture by the ancient languages should be no longer postponed, in the case of those who are intended for the learned professions, and when the studies of others destined for the arts should take a different direction. The question, whether the proper age has been adopted for this separation is wholly one of experience, and the facts in reference to it will be submitted in speaking of secondary instruction.

The subjects taught and the time they occupy in the *elementary school* agree very closely with those of the first two classes* in the seminary school of Berlin. Drawing on slates and singing are both introduced here, constituting an advantage over the other; they are brought in as a relief from intellectual exercises, and as objects of direct attainment. The number of hours of duty is but four on four days of the week, and two on each of the others. These might, I think, be increased to the standard of the primary schools, twenty-four hours per week, without fear of over-tasking the pupils; and if a portion of the time were bestowed on judiciously arranged exercises, the physical as well as moral education would be improved. The moral training of the play-ground is not as yet an element in any of the German systems. The same master teaches in succession all the studies of his class.

The pupils pass from the third to the second class at the end of six months, a change which is favorable to their progress, since at this early age strongly marked differences appear soon after entering the school. With a similar view of fitness in regard to their age, the plan of daily exercises is not rigorously prescribed, but is merely indicated to serve as a general guide in relation to the time to be devoted to the different subjects.

I found occasion in this school to remark the danger of defeating the exercises of induction, by making them merely mechanical, by the reception of fixed answers to invariable questions; and, also, the necessity of selecting very simple melodies for the early exercises in singing; beyond these, the exertion of the voice of the child, so far from being a physical benefit, is a positive injury. My preference for beginning arithmetic with a reference to sensible objects, that is, by denominate numbers, was again strongly confirmed.

It might seem impossible to determine how many pupils of a definite age might, with advantage, be intrusted to the care of one teacher under a given method of instruction. The average for branches of the same kind is not, however, so wide from the extremes as might at first be supposed. In the simultaneous method, the skill of the teacher is the chief determining quality. The various subordinate ones depending upon the pupil, the particular exercise, the arrangements in reference to ventilation, warmth, &c., will readily suggest themselves. In the midst of all these, the average shows itself to attentive observation. It is easy to see how many pupils are attending to what is going on, and if the teacher be skilled in his art, the number is thus obtained, which a class should not exceed. For the intellectual exercises, I obtained in this way from thirty-five to forty in the German schools as the maximum number of an elementary class; the observation in reference to the classes of the best teachers here confirmed these numbers. In the mechanical branches, the number of pupils may be very much increased, without material injury to the instruction, and hence, the classification which suits them is not adapted to the intellectual departments.

The principal subjects of instruction in the *burgher school*, including both the lower and higher departments, are religion and morals, German, French, arithmetic, geometry, natural history, history, geography, calligraphy, drawing, and vocal music, and to these are added in the highest classes technology and physics. The list differs from that of the Dorothean higher city school, and the seminary school of Berlin, in the omission of Latin and the introduction of technology and physics, both which differences mark the proper character of the school. It is not intended that the upper classes shall prepare pupils for the higher classes of the gymnasium, but that those who are to be trained in the classical studies shall have previously passed to the lower classes of the gymnasium, where they properly belong, and where they can obtain the instruction appropriate to their objects. The distribution of time is shown in the annexed table, which is similar in its arrangement to those already given.

PLAN OF INSTRUCTION IN THE HIGHER AND LOWER BURGHER SCHOOLS OF LEIPSIC.

SUBJECTS OF INSTRUCTION.	BURGHER SCHOOL FOR BOYS.						Total.
	Higher School.			Lower School.			
	First Class, 13 and 14 years of age.	Second Class, 12 and 13 years of age.	Third Class, 11 and 12 years of age.	Fourth Class, 10 and 11 years of age.	Fifth Class, 9 and 10 years of age.	Sixth Class, 8 and 9 years of age.	
Religious Instruction,	4	4	4	4	4	4	24
German Language,*	5	6	8	6	8	6	39
French,	2	2	2				6
Arithmetic,	4	4	4	4†	6	6	28
Geometry,	2	2	2				6
Natural History,	1‡	3	2	2	2	2§	12
Technology,	2						2
Physics,	2						2
Geography,	2	2	2	2		2	10
History,	2	2	2	2	2		10
Writing,	1	2	2	3	3	4	15
Drawing,	4	4	3	3	2	1	17
Singing,	2	2	2	2	1	1	10
Total,	33	33	33	28	28	26	

The increase in the number of branches as the pupils rise to the upper classes, seems to me judiciously made in this plan. At the same time, the number of hours per week is gradually increased, and perhaps beyond the due limit, though it would require longer attention than I could give to this institution to affirm positively that this is the case. Comparing the programme with that of the classes of corresponding age in the seminary school of Berlin, a general similarity appears throughout, although each has distinctive features. In the sixth class, of which the pupils are of the same age with those of the fourth in the seminary school, a few lessons of natural history and geography ("knowledge of home") are given, and with advantage. The number of hours per week devoted to the different studies is nearly the same in both schools.

In the fifth class, natural history and history are introduced in the burgher school, and in its corresponding classes in the seminary school, Latin, French, and geometry. The number of hours of arithmetical instruction is greater in this school than in the other.

A similar difference continues in the fourth class, as it is not the object to begin French until after those who leave the school at fourteen have terminated their course. The elementary exercises of geometry are begun in this class of the burgher school.

The third class is the first or lowest of the *higher burgher school*, and the programme of this and of the second agree in the main with those of the seminary school. Greater attention is devoted to religious instruction, to arithmetic, and drawing, and less to French, in the burgher than in the seminary school. The number of hours given to the first named branch in the burgher school is double that in the other, and the number to the last only one-half, which is, probably, too small an allotment for the object. Technology and physics are taken up in the first class of the Leipsic school, and Latin is continued through all those of the Berlin institution.

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* This includes the exercises of reading.
† In this is included an hour of preparatory exercises for geometry.
‡ Anthropology.
§ Elementary natural history and natural philosophy.

In regard to the plan of treating the subjects of instruction, the following is a comparison of the two schools:

1. In *religious instruction*, the general train is the same, being more detailed in the burgher school, and having a special course of morals in the higher classes. In general, the German institutions are very free from an objection urged to a course of religious instruction, in a former part of my report, namely, that it was addressed rather to the understanding than to the heart. There is no express instruction in morals, but it is because the morals of the Scriptures mingle with their daily lessons, and no special course is needed, until a more advanced age, than that embraced by these schools in general.

2. The course of *German* language (including composition) and reading, is parallel with that of the Berlin seminary school, except in the two higher classes. In these a turn is given to the compositions to adapt them to the peculiar destination of the pupils, who are also exercised in speaking, by reading dialogues and brief dramatic pieces. In a country enjoying a constitutional government, the art of public speaking may not be neglected by its citizens.

3. The course of *French*, in the burgher school, struck me as rather defective, probably from the small amount of time which is devoted to it, as already stated.

4. *Mathematics.*—The courses of arithmetic and geometry are also parallel with those in the seminary school. The mathematical studies here are extended further in Algebra, and include logarithms, mensuration, and surveying.

5. *Natural history, physics, and technology.*—The early beginnings of this course are exercises in induction, directed particularly to awaken habits of observation and reflection. Later, some of the more interesting parts of natural history are taken up, and, finally, the subject is treated somewhat systematically, and a technological direction given to it. The physics consists of such popular notions of natural phenomena as should be possessed by all. The technology explains the processes of some of the common arts and trades.

6. The course of *geography* begins like that already described at Halle, but subsequently pursues the inverse order, giving an idea of the earth as a part of the world, its form, motions, &c. Director Vogel has conceived the plan of presenting the parts of the earth always in their just proportions, as upon the sphere, and has contrived for this purpose a globe which may be divided through the equator or through a meridian. The hemisphere being suspended with its plain surface against the wall, presents the convex surface, with its delineations, in true proportion. This idea he proposes to extend, by substituting for maps, in the early recitations, portions of spherical surfaces, with the delineations of the countries upon them.

After taking a general survey of the different countries, especially those of Europe, the pupils pass to the geography of Germany. They then enter more into the details of the countries of Europe, draw maps, and, finally, study mathematical and physical geography in a scientific form. To carry out his views of the connection of history, natural history, and ethnography with geography, director Vogel has prepared a school atlas upon a new plan. The vignettes surrounding the maps contain illustrations of these different kindred branches, and address the eye of the learner, thus impressing the memory with their connection with the countries delineated. For example, around the maps representing the different quarters of the globe are the characteristic plants, animals, and men of the different regions near to the portions of the country where they are found. The more detailed maps of the countries give a view of their natural productions, represent the more prominent or characteristic qualities of the nation, the arts which flourish more particularly among them, and give medallions portraying their great historical characters, or including the names of their distinguished men, or the dates of important historical events.

7. The *historical* course, as far as it is distinct from that last mentioned, agrees, in its general features, with that of the Berlin seminary school, being, however, more minute.

8. *Writing and drawing.*—In learning to write, the classes begin with small hand, and succeed better than is usual upon that plan, probably from the attention, at the same time, to drawing. The last named branch is taught by Schmidt's method. The teacher has made an admirable collection of models in wood and plaster, of geometrical solids, of machines, of buildings, bridges, and the like, of ornaments, &c., and brings his class forward in this kind of drawing very rapidly. Only the more elementary parts of these collections, however, are used for the classes of the burgher school.

9. Vocal music is taught as in the other schools

The particular method which the teacher pursues in his instruction is left much to the individual, the director remarking, justly, that if he is competent to his place, his method must be good. He has for his guide, however, a programme indicating the degree of proficiency which his class must show at the end of the year.

In the lower classes of a school like this, if the pupils have been previously well trained, a larger number can be instructed by the simultaneous method than in the elementary classes, in a subject of the same kind. This advantage is lost as the course becomes higher, and the scale turns again in proportion as individual teaching becomes more desirable, with increased individual development and differences in mental quality. The simultaneous method requires watchfulness on the part of the teacher, not to deceive himself as to the progress of his class. It is, of course, rarely that a question can not be answered by some of them, while the mass may be entirely ignorant in relation to the subject. I have seen both skill and attention fall into the mistake to which I refer.

Between each of the hours of recitation there are a few minutes of interval, during which the classes leave the school-rooms. This is an arrangement favorable to health, and worthy of imitation.

The lower classes have each a teacher for all the subjects, a system which is gradually changed in the higher classes for that of a teacher for a single subject. Drawing and singing are taught by special instructors in the higher classes.

The classes for girls are similar to those described, the instruction being modified so as to render it more applicable to the sex.

The plan of instruction in the "*Real School*," the highest of which this establishment is composed, can hardly be said to have received, as yet, its ultimate form. The school belongs to the class of secondary instruction, running parallel with the gymnasium, and preparing for the university of the arts, or polytechnic school, as the other prepares for the university of the learned professions. The branches taught, and which I may enumerate, to complete the description of the institution, are,

1. Religious instruction. 2. German. 3. French. 4. English. 5. Mathematics, including algebra; geometry, trigonometry, plane and spherical; practical surveying; a review of arithmetic and technical arithmetic. 6. Physics and chemistry. 7. Natural history. 8. History. 9. Geography. 10. Calligraphy. 11. Drawing. 12. Vocal music.

The separate branches in this school are in general taught by special instructors. The methods of Pestalozzi are considered by the director as less applicable to the higher than to the lower courses. But I doubt this, for though much less frequently applied, I have seen them used with good effect in advanced courses. The opposite method takes up less time if the object be to communicate positive knowledge, and the importance of this object certainly increases, and even becomes paramount, in the later parts of the student's career. The objection urged to this plan does not apply in the case of those subjects which are continuous through a series of years, but to such as are broken up into a number of kindred branches, the elements of which are to be taught at different, and even at advanced stages of the course.

The plan of special study hours for those whose parents wish them to be prepared for their lessons under the direction of a teacher, has been adopted in this school.

Mr. Kay makes the following observation on the public schools of Saxony:

Each parent is obliged to begin to educate his children at home or to send them to some school at the commencement of their sixth year, unless the child is sickly and unfit to bear any mental exertion. After a child has once commenced attending a school, it must continue such attendance regularly, summer and winter, for eight years; and even on the attainment of its fourteenth year, it may not discontinue such attendance, unless it has obtained a certificate, stating that it can read, write, and cipher, and that it is well acquainted with the doctrines of its religion and with the truths of the Scripture history. The examinations for these certificates are conducted by the religious ministers, in conjunction with the teachers. In some few cases, however, where the parents are very poor, the school committees are empowered to permit the parents to remove their children from school at the end of their tenth year, if they can read, write, and cipher, and know the leading facts and doctrines of the Scriptures. But before they have attained this age, they can not be taken from school, except when they are too sickly or too weak to attend the classes.

No child may be employed in any manufactory, or in any manual labor, before it has attained the age of TEN years. The Saxons consider the education of young children as a matter of primary importance, to which all else must be made to give way. The morality and the liberty, as well as the social and physical condition, of the people are all considered to be dependent on the early and full development of their moral and intellectual faculties. To the attainment of this end, therefore, every other consideration is made to yield. The Saxons are, as is well known, a commercial people. But still commercial requirements have not outweighed moral considerations. From the age of six to the age of fourteen, every child must receive a sound, efficient, and religious education. Those children, however, who are wanted to work in the manufactories, and who have attained a tolerable proficiency in Scripture history, reading, writing, and arithmetic, are permitted to discontinue their attendance on the *daily* classes, at the age of ten; but are required to attend afternoon classes, two or three times a week, during the next four years. Thus, even the factory children receive regular periodical instruction from highly educated teachers, until they attain the age of fourteen.*

The most minute and particular regulations are in force in Saxony respecting the school buildings. The law prescribes that they shall be situated as nearly as possible in the center of the parish, and that a quiet and perfectly healthy site shall be selected. To use the words of one of the regulations of the Saxon Chambers on this subject: "If there is any building which deserves the careful consideration of the architect, it is that which is intended for the village school." The government has prepared several plans, with specifications of the cost, &c., for the guidance of the county authorities and village committees.

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* The following section, (143) of the School Law, relates to the neglect of school attendance.

1. In every parish where there is a school union, there shall be a school messenger. In large parishes which are divided into many school districts, every school shall have a particular messenger, besides one for every school district.

2. Excepting on the common vacations, and on those weeks and days when there is no school, the school messenger must ask the teacher, on every school day, after the school hours, what children have been absent without an adequate excuse.

3. In places where there is but one school, the school messenger must ask this question at least twice a week, on Wednesdays and Saturdays, and require an account of the last three days.

4. The next morning, not later than an hour before the beginning of the morning school, the school messenger of every place must go to the parents of the absent and unexcused child, and demand him for the school, or else the reason for his absence. For every such visit the parent must give the messenger six pfennings.

5. If a child does not come after this demand, but remains away unexcused for two days, the school messenger must take him on the third day and conduct him to the school. The fee from the parents shall be one groschen.

6 A child of a place where there is but one school, who does not come on the Monday or Thursday after the visit of the school messenger, and remains unexcused; also if he stays away six days without adequate excuse, must be taken by the messenger and carried to the school, and the fee from the parents shall be two groschen.

7. If the child stays from the school with the knowledge of its parents after being thus carried to it by the messenger, measures for punishment must be taken.

8 If the messenger can not collect his fees, he must apply to the magistrates, whose duty it is to coerce the payment.

9. If the parents are actually too poor to pay the same, the magistrates must demand payment quarterly from the school chest.

10. The magistracy must lend their assistance to the messenger if, without good reason, he is prevented from taking the child to school; or, if he is improperly treated while executing the duties of his office.

To follow the words of the regulations themselves: "Every school-room must be sufficiently roomy, lofty, well lighted, perfectly dry, and free from damp, of a convenient and suitable form for the management of the school-classes, and in a healthy, open, and quiet situation."

On each of these several heads, a great number of minute and most carefully digested regulations have been made, for the purpose of insuring the attainment of these ends. The *minimum* of the size and of the height of the school-room has been laid down, and very particular regulations have been made relative to the warming, cleansing, and ventilating of the school-rooms; to the proper draining of the land upon which the school is to be built and upon which the play-grounds are to be aid out; to the lighting of the class-rooms; to the disposition of the desks; and even to the position and construction of the doors. Nothing which regards the school-rooms or school apparatus has been deemed too unimportant, to deserve the most careful consideration, or too insignificant to require the most minute and scientific regulations. The school-rooms in Saxony, as indeed throughout Germany, are well supplied with parallel desks, forms, maps, illustration boards, and all the apparatus necessary to enable the teacher to instruct his children in an effective manner. In the towns the schools generally contain eight or nine classes. A separate room is provided for each class. A learned teacher, who has received *fourteen* years' preparatory education, presides over each separate class. One of these teachers is the general director and superintendent of the whole school.

Each of the class-rooms contains about sixty children. The law forbids any teacher to allow more than sixty to be instructed in the same class-room. Each of these rooms is fitted up along its length with parallel desks and forms, facing the teacher's desk, which is raised on a platform about a foot high at one end of the room. They are continually whitewashed and scoured, and are well ventilated. They are lofty, and always well lighted. The children are never kept in the rooms more than about two hours at one time. They are all taken down into the play-grounds at the end of every hour and a half, for ten minutes' exercise, and during this time the windows of the class-rooms are all opened and the air purified.

The law requires every school committee in Saxony to furnish their school rooms with at least the following apparatus:

1. A supply of school-books, slates, slate-pencils, lead-pencils, pens, paper, &c. for the use of those scholars, whose parents are too poor to buy these things for their children.
2. Some black painted, smooth, wooden boards, on which the teacher may assist his class-lessons by delineations or writing.
3. A moveable easel on which to raise the blackboards.
4. Some maps, and among these one of the Holy Land; also some large copies for drawing and writing.
5. A reading machine, like those now used in some of the best of our infant schools; and
6. The school committees are advised to furnish, whenever they can afford to do so, a collection of objects for the illustration of the lessons in natural history and physical geography.

Besides this apparatus, many village schools are supplied with a library of reading books, from which any villager can take books home, on payment of about a halfpenny a week.

To give a general idea of the subjects of instruction in the schools, where the children of the people are brought up, I subjoin a table, which will show what is taught in the primary schools of the city of Dresden, and how the hours of the day are apportioned to the various subjects of instruction.

The following Time Table in the Dresden Primary Schools, shows the number of hours devoted each week to the different branches of instruction.

CLASS I.		CLASS II.		CLASS III.		CLASS IV.		SUBJECTS OF INSTRUCTION.
Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	
6	6	6	6	6	6	5	5	Religious instruction.
1	1	1	1	1	1	1	1	Recitation.
3	3	4	4	6	6	8	8	Reading.
3	3	4	4	3	3	3	3	Writing.
3	3	3	3	3	3	2	2	German language. IV. Mental and *viva voce* exercises.
4	4	4	4	4	4	3	3	Arithmetic.
3	3	3	3	2	2	0	0	Geography, history, and natural history.
2	1	2	0	0	0	0	0	Drawing.
1	1	1	1	0	0	0	0	Singing.
0	10	0	6	0	4	0	0	Instruction in feminine duties, such as sewing, knitting, &c.
2	2	1	1	0	0	0	0	Preparation for the classes under the superintendance of one of the teachers.
28	37	29	33	25	29	22	22	Total number of hours in each week devoted to instruction.

To explain this table it is necessary to remark, that in the town schools, there are generally eight classes instructed in eight separate class-rooms, four for boys and four for girls; that the fourth class contains the least and the first class the most advanced of the children; that each class is under the charge of a separate teacher; and that the girls generally remain in the afternoons for an hour and a half after the boys have left, in order to be instructed in sewing, knitting, &c., by a woman who is paid to conduct this necessary branch of feminine instruction.

Since the revolution of 1848, the education in all the primary schools has been made perfectly gratuitous, so that *every* parent can send his children to any school free of all expense; except that, which is incurred by providing them with respectable clothing.

Besides the day schools, there is still another class of schools, which merits our attention. These are the Saxon Sunday schools. They are to be found in all the towns, in the great parishes, and in the manufacturing districts. They are opened on the Sunday mornings or Sunday evenings, and are intended for the instruction of all persons of whatever age they may be, who desire to continue their education, and who are prevented, by their week-day duties, from attending any of the primary or superior schools. They are frequented principally by adults, or by young people above the age of fifteen, who have left the primary schools. These classes are opened every Sunday for about three or four hours, and are conducted by some of the district teachers, who are paid for this extra labor by the county authorities. The education given in them is not confined to religious teaching. It comprehends besides this, instruction in reading, writing, arithmetic, history, geography, the physical sciences, drawing, and the new inventions of the age. These classes generally assemble on the Sunday evenings, in one of the day-schools of the town or district. The incidental expenses necessary for warming and lighting the room, and for the purchase of the necessary books, &c., are generally defrayed by the voluntary contributions of the students, who attend the classes, and by the benevolence of rich people, who are interested in promoting these useful institutions. When the funds derived from these sources do not suffice, the minister of public instruction is empowered to assist the town or other locality, in perfecting and supporting these schools. In many towns and parishes, however, they are entirely maintained by public subscriptions, and in these cases the students do not pay any thing for their education.

So eager are the Saxon people to gain knowledge, and so well do they understand its value, that wherever any of these schools are opened on the Sundays or other holidays, they are, as in France, immediately filled to overflowing, with people of all ages from eighteen up to fifty, who are desirous of increasing their stock of information, and of unfolding the powers of their minds. The importance of these institutions can not be over estimated. By their means, the people of Saxony are always learning, that they have more to learn, and are always renewing the instruction given in the primary schools. The lessons of the primary schools are here continually enforced; morality and prudence are inculcated; the union between the teachers and the people is continually strengthened; the value of education and intelligence is each week shown in a still clearer light; the people are continually brought into a closer connection with persons of a much higher order of intelligence; the tastes and habits of the people are raised; and by these means, their independence of character, their prudence, their energies, and all their political as well as social virtues, are progressively developed. They do not pretend to supply the place of day-schools. They contain scholars of all ages, young and old, and their teachers are persons, who have studied pedagogy as a science, and who are, in every sense of the word, qualified to teach.

As an example of what a Sunday school is in Saxony, I may mention one of those instituted at Dresden for adults. It is supported partly by charitable subscription and partly by the municipal authorities of Dresden. Five paid teachers conduct the instruction given in it. It is open every Sunday morning from 8 o'clock until 12, during which time the teachers attend and instruct the different classes. The instruction is perfectly gratuitous, and a great part of the necessary materials, such as paper, pens, ink, and drawing materials, are provided for the scholars free of expense. The object of the institution is to awaken the religious feelings of the scholars; to strengthen their moral principles; and instruct them in reading, writing, the German language, geography, history, arithmetic, and drawing. The way in which the four hours of study are divided between these different studies, may be seen from the following table:

LESSON PLAN OF A SUNDAY SCHOOL AT DRESDEN.

<table>
<tr><th>Morning.</th><th>1st Class.</th><th>2d Class.</th><th>3d Class.</th><th>4th Class.</th></tr>
<tr><td>From 8 to 8½</td><td colspan="4">Prayers and Religious Instruction.</td></tr>
<tr><td>From 8½ to 10 o'clock.</td><td>Arithmetic and Elementary Geometry; Extraction of Square Root and the Rules of Proportion, and their application to mechanics.</td><td>Mental and Slate Arithmetic; fractions, both common and decimal.</td><td colspan="2">Geography and History of Germany; Use of the Globes and Physical Geography, especially as regards Germany and Saxony</td></tr>
<tr><td>From 10 to 11 o'clock.</td><td>Drawing; with constructive Geometry and Architectural Drawing.</td><td>Drawing; Light and Shadow Exercises in Lead, Chalk, Pen and Ink, and Colors.</td><td>German Language; Orthography, Etymology, and Dictation Exercises.</td><td>Arithmetic, both Mental and Slate Exercises.</td></tr>
<tr><td>From 11 to 12 o'clock.</td><td>German Language; various Exercises in Composition.</td><td>German Language; various Exercises in Composition.</td><td>Drawing principally from Models.</td><td>Writing and Elocution.</td></tr>
</table>

SAXONY.

Real Schools.—In Saxony there are but 3 or 4 real schools; although, in Plauen and Zittau, there are parallel[*] real classes joined to the gymnasium, (classes. II. III. and IV.)—in which—

Latin is taught in 3 to 4 hours.
French taught in 4 hours.
English taught in 3 hours.
Mathematics taught in 4 hours.
Arithmetic taught in 1 to 2 hours.
Natural Philosophy in II. and III. in 2 hours.
Chemistry in II. in 2 hours.
Natural History in 1 to 2 hours.
Drawing in 4, (in II., i. e., the highest optional.)
Geometrical Drawing in 2 to 5, (in II. and III.)
German in 3 to 4 hours.
History in 6 hours.
Geography in 2 hours.
Religion in 2 hours.

Public Examination at Dresden, (Oct. 27th, 1856,) of Teachers appointed to another place.—The Committee consisted of a Counselor of the Consistory, as Chairman, the Principal of a Teachers' Seminary, and of a Burgher School in Dresden.

1. WRITTEN EXAMINATION.—8–12 O'CLOCK.

*a. **Pedagogical Composition:*** what shall we think of giving particular laws to be obeyed by the children in school, and with regard to school?

b. 4 ***Arithmetical Problems:*** 1. $1\frac{5}{12}$ cwt. were lost of 7 cwt. 31 lbs. 13 ounces, $2\frac{6}{7}$ drams; if the loss amounts to $31\frac{1}{2}$ thalers, what was the whole worth? 2. To fill the space of a cubic mile, (1 mile, 24,000 feet,) with bricks, each 1 f. long and $\frac{1}{2}$ foot broad, 1000 laborers want 6,400 years, if they work 300 days a year, 12 hours a day, and if each laborer lays one brick in a second; how thick is such a brick? 3. A man had to pay for several ducats bought, $9\frac{1}{3}$ $\frac{1}{6}$ agio, $32\frac{1}{3}$ thalers; what was the value of a ducat, when he afterward gave them away for 33 thalers, $22\frac{1}{2}$ ngr. (30 ngr. equals 1 thaler.) 4. A. had to pay B. 300 thalers, after 3 months, and 1,500 thalers, later; the whole, however, was paid after 10 months, without loss for either party, what time were the 1,500 thalers to be paid?

2. PRACTICAL EXAMINATION.—3–4.

The (4) examiners, one after the other, catechised on Psalm 143, 2; Ps. 143, 5; Ps. 143, 6; Ps. 143, 10.

3. ORAL EXAMINATION.

1. *Dogmatic.* How the narrative of ***Moses' birth*** is to be treated in school, and what *precepts*, according to the different ages of the children, can be drawn from it?

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[*] The "Hohere Burgerschule" is not satisfied with such *parallel* classes in gymnasia, but requires independent schools, on an entirely separate plan.

The following is the plan of lessons in *languages* as required by Mager the late editor of the "Pedagogical Revue," for a real gymnasia:

	Lower.		Middle.		Upper Classes.	
	VI.	V.	IV.	III.	II.	I.
German	6	6	5	5	4	3
French	8	7	6	6	4	3
English	—	7	6	6	4	3

2. The written compositions and the catechisations are criticised.

3. *Psychology.* What is the soul? Whence does it appear that the soul has faculties? Tell the chief faculties of the soul, and their formations, (representations,) ideas, desires, sentiments, etc.

4. *Geography.* Africa.—Its situation with regard to the other parts of the globe, to the zones, and its boundaries? Countries of Africa?

5. *History.* What has happened in Africa? More particularly with regard to Egypt, Carthage,—the Punic wars, etc.?

6. Criticism of the arithmetical papers.

SCHOOL OF MODERN LANGUAGES.—The *Modern Gymnasium*, (private,) at Leipzig, was conducted by its late director, Hauschild, (now Superintendent of the evangelical schools of Brunn,) on the following principles of instruction:

1. The easier languages first. (Genetical method.)
2. Each language, at commencing it, pursued in a measure by itself; or at least, with from ten to twelve hours a week, of instruction. (Concentrating method.)
3. Progress according to the pupil's ability. (Calculating method.)
4. Intuitive instruction. (Pestalozzian method.)
5. Associating geography and history. (Vogel's method.)

According to these principles, the boy passes from the elementary into the German school, (because he is a German boy.) When ten years old, he advances to the English school, and in his twelfth year, to the French.* When fourteen years old, he enters the gymnasium, or real school.

THE SCHOOL OF FORESTRY AND AGRICULTURE, at Tharand, near Dresden, contains, (1857,) in the former department, 26 Saxon and 27 foreign pupils; in the latter, 18 Saxon and 42 foreign. Among these foreigners are 3 Hungarians, 1 Transylvanian, 2 Servians, 1 Galician, 1 Spaniard, 2 Swiss, 4 Norwegians, 2 Russians, and 2 Americans.

TEACHERS' MUTUAL AID SOCIETY.—The Association of Saxon Teachers, for mutual help in sickness, embracing 1,575 members, report for 1855, that 130 members had been assisted during the year out of the funds of the Association, which is made up by a small annual rate on each member, according to his salary.

GYMNASTICS.—In the burgher schools of Leipzig, the pupils receive systematic instruction in gymnastics.

COMMERCIAL SCHOOLS.—The Commercial School in Dresden, founded in 1854, by the Merchants' Association, has 185 pupils, divided into two sections; one for the mercantile apprentices, who are obliged to attend for two years, and has 7 teachers. There is a similar school at Leipzig, and another in Nuremberg, with 329 pupils.

THE PESTALOZZIAN ASSOCIATION in Saxony has 2,486 members, and gave assistance last year to 244 orphan children of teachers, in 117 families.

PLAN OF STUDIES IN THE ROYAL INDUSTRIAL SCHOOL, (*Gewerbschule*,) AT CHEMNITZ, SAXONY.

This Industrial School ranks higher than any other school of that name, and is very nearly a Polytechnic Institute. We have heard but one complaint, viz.: that the pupils, from 14 years of age upward, had too much work; they have to take notes in their many lessons, and have to work them all out neatly and accurately. The following plan is taken from the programme of 1857, preceded, as usual, in the schools of a higher grade, by a treatise—this time on German orthography.

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* In Gutbier's private school in Munich the boys pass from German into Italian, then into the French, and finally into the English school.

SECTION A comprises those pupils who are preparing for a trade in which machines of complicated construction are used, and who pass through a course of four years. A a, comprises such as are preparing for a mechanical branch, *e. g.*, construction of machines, spinning establishments etc.; A b, such as prepare for a chemical branch, *e. g.*, manufacturing sugar, porcelain, etc.

SECTION B comprises pupils who prepare for a trade chiefly chemical, and without complicated machinery; and who, therefore, do not receive the instruction in mechanics and machine building; and who remain but three years; *e. g.*, future dyers, soap-boilers, tanners, etc.

SECTION C comprises such as prepare for agriculture; and who also stay three years.

CLASS IV.

1. *Arithmetic:* 6 lessons a week, with Tellkamp's *Vorschule der mathematik.* *Special Arithmetic:* formation of numbers, numeral systems, whole numbers, fractions, geometrical proportions, reduction. The four rules, application of geometrical proportions, rule of three, etc. etc. *General Arithmetic:* the four rules with letters, involution and evolution, algebraics, fractions, simple equations, problems.

2. *Geometry:* 4 hours; lines, angles, triangles, rectangles, polygons, sequents, tangents, circles, similarity of triangles, of polygons, lines in and on the circles, area of regular polygons and of circles, equality and proportion of surfaces, contents of figures.

3. *Natural Philosophy:* 4 hours, with Müller's text-book. General introduction, outlines of astronomy, physical geography, climatology, doctrine of heat, magnetism and electricity.

4. *Natural History:* 4 hours; in summer, botany with particular regard to such plants as are important for common use; outlines of the physiology of plants. In winter, zoölogy with outlines of anatomy and animal physiology.

5. *Drawing:* 6 hours; from geometrical bodies, plaster models, etc., after Dupuis' method; with pencil or chalk, chiefly in colors.

6. *Geometrical Drawing:* 4 hours; plane drawing, on a given scale, of bodies between two planes of projection in different position, single or combined; construction of screws,—always connected with exercises in painting with Indian ink.

7. *German Language:* 4 hours; with Götsinger's grammar. In IV., b, 2 lessons for orthographical and stylistical exercises, 1 for oral exercises, and 1 for grammar. In IV., a, where the admitted pupils are better prepared in this respect, 2 lessons in grammar, 1 oral and 1 for composition.

CLASS III.

a. Studies common to all pupils of this class.

8. *Arithmetic:* 4 hours; equations with several unknown quantities, diophantine problems, equations of the second degree, logarithms, logarithmic equations, arithmetrical and geometrical progression, interest on interest, &c.

9. *Geometry:* 4 hours; stereometry, plain trigonometry, application of algebra to geometry.

10. *Mercantile Arithmetic:* 2 hours for denomination C. of pupils, only in winter.

11. *Natural Philosophy:* 3 hours; acoustics, optics; solid, liquid and aerial bodies.

12. *General Chemistry:* 5 hours; inorganic chemistry, chemical elements, etc. Organic chemistry; the more important vegetable and animal matter, as fibre, starch, sugar, organic acids and bases, oils, colors, bones, flesh, blood, milk, etc., and their products of decomposition, (fermentation, distillation, etc.,) their

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* Chemnitz has a population of about 50,000 inhabitants, and is the chief manufacturing town of Saxony.

qualities, production and use; their relation to living vegetables and animal bodies.

13. *Architecture:* 2 hours; the fundamental rules for all classes of architecture; principal combinations; chief parts of buildings, their laying out and proportion; construction of ovens, tile-kilns, lime-kilns, malt-kilns, etc.

14. *German:* 4 hours; two hours in grammar, two in oral and written exercises, alternating with reading of dramatical pieces. The less advanced pupils have two more lessons in spelling and reading.

b. For Section A.

15. *Doctrine of Projection:* 5 hours; Projection of simple lines, planes and bodies, etc., etc.

16. *Practical Geometry* and

17. *Drawing of Plans, (planzeichnen:)* in summer, one afternoon, practical exercises in surveying; in winter, two lessons in practical geometry, and two in drawing plans.

18. *Drawing:* 4 hours, as in class IV., but with the addition of light and shade.

Besides, A b, has four lessons in No. 21, with the omission or diminution of No. 18.

c. For Section B.

19. *Mechanical Technology:* 2 hours; with Karmarsch's text-book.

20. *Mineralogy* and *Geognosy:* 2 hours; the former in summer; the latter in winter, both with especial regard to agriculture and trade.

21. *Practical Exercises in Chemistry:* 8 hours, in winter.

The pupils of this section also attend, in summer, No. 18. Nos. 16 and 17 are optional for them.

d. For Section C.

22. *Cattle Breeding:* 2 hours; General portion, anatomical and physiological introduction, hygiene, breeding and feeding.

23. *Nursing of Plants:* 2 hours, in summer; General portion; influence of climate and soil on the development of cultivated plants; raising, propagating and diseases of plants; means of cultivating, sowing, nursing, gathering and preserving.

Besides, the pupils of this section have in summer two lessons in No. 18, the excursions No. 40, Nos. 16, 17, 20, and, if sufficiently prepared, No. 21 for two hours in winter.

CLASS II.

a. In common.

24. *German:* 4 hours; two lessons in German literature; two oral and written exercises, reporting, etc.

25. *Architectural Drawing:* 2 hours; for sections B and C only in one half year. Drawing of architectural details, copying and sketching of plans.

b. For section A.

26. *Analysis:* 4 hours; for A b, only in summer. Figured numbers, higher arithmetical series, equations of the third degree, combination, quadration of functions (?); binomial, exponential, logarithmetrical, goniometrical, and cyclometrical series, Taylor's series, value of 0-0, greatest and least value of the functions, methods of the least squares.

27. *Spherical Trigonometry* and *Analytical Geometry of the places:* 3 hours; only for A a.

28. *Mechanics:* 5 hours.

29. *Drawing of Machines:* in summer 6, in winter 4 hours

30. *Descriptive Geometry:* 3 hours; only for A a.

31. *Drawing:* 4 hours; partly from plaster models, partly from copies. Besides, A attends 19, and A b also 20. Moreover, A a partakes in 2 weekly lessons, A C in 6 of technical chemistry, (No. 32,) A C, with diminution of No. 29, and possible omission of No. 31, attends the exercises of No. 33.

c. For Section B.

32. *Technical Chemistry:* 6 hours; review of all chemistry. It is chiefly intended to fix and enlarge the chemical knowledge and judgment in all directions; at the same time every thing important for application is prominently considered,

and a representation given of the important chemical manufactures, and of those trades which are based on chemical principles—this being included in the exposition of the reflective elements, *e. g.*, the manufacturing of clay ware, in speaking of clay, etc. Moreover the principal merchandises and products are here spoken of as fuel, coloring matter, food, etc.

33. *Practical Exercises in Chemistry:* 8—12 hours, as in III. Besides, the pupils of this section attend 19, and optional 29 and 31; and also, if it appears advantageous for them, 12 and 20.

d. For Section C.

34. Doctrine of *soil and manure:* 2 hours; the various circumstances that influence the soil, classification of soil according to the Saxon mode of valuation, natural and artificial sorts of manure, their effect and application.

35. Nursing of *plants:* in summer 3, in winter 2 hours. Especial part: culture of useful plants, including meadows, vines and orchards, with a short sketch of forestry.

36. *Cattle Breeding:* 2 hours; especial part: cattle, horse, sheep breeding, and with less details, that of goats, fowls, fish, silk-worms and bees.

37. *Agricultural Machines:* 2 hours.

38. *Farming:* 3 hours; in general; requisites of farming, organization and management of a farm, Agricultural book-keeping, Agricultural valuation.

39. *Agricultural Architecture:* 1 hour, in winter, regarding the buildings, barns, stables, etc.

40. Agricultural *excursions*, in company of a teacher, and *experiments* of *cultivation* in the fields and gardens of the establishment. Time not fixed.

41. *Knowledge of Machines* and *Technology:* 4 hours; in summer, description of the chief motors and parts of machines, and of the manufacturing of wood and iron.

42. *Agricultural Chemistry:* 4 hours; in winter.

Besides, the pupils of this section attend 29 two hours a week; especially for drawing agricultural utensils and machines; No. 16 and optionally 17; No. 33 in summer four times, in winter 4—8 times, and No. 32 for three hours.

I. CLASS—SECTION A.

43. Knowledge of *Machines:* 8 hours.

44. *Drawing of Machines:* 8 hours for A a, 4 for A b.

45. *Mathematics:* 3 hours only for A a. Theory of higher equations, analytical geometry of space.

46. *Perspective:* 2 hours only for A a. Perspective representation of points, lines, plains and bodies, with the shade of the sun and of lamps, etc.

Mineralogy and Geognosy, (No 20,) only for A a.

Technical Chemistry, (32,) A a; 2 hours in summer. The pupils of A b, have finished it in the second class.

47. *Analytical* and *Theoretical Chemistry:* 3 hours; only for A b. The qualitative analysis reviewed and completed, the quantitative analysis of weight and volume treated more accurately, weight of atoms, their relations to crystal forms, to volume and specific weight, etc.

Practical exercises in chemistry, (33,) A b, in 12 hours; A a, 2—4 hours in summer, 4 hours in winter.

The pupils of this class attend German, (24,) 2 hours, 19, 25, (in summer,) and 31, (in general only A a, 2 hours,) and optionally, No. 16.

Besides, all the pupils of the school have opportunity to learn,

48–51. *French*, in four classes, 3 hours a week. The pupils are aamitted to that class for which each of them is fit.

52–54. *English:* in three classes; 3 hours.

55. *Commercial Book-keeping* and *correspondence:* 3 hours.

56. *Embossing* in clay, one afternoon in every week.

57. *History* and *Geography:* in IV., 4 hours, which all pupils not sufficiently advanced in those branches *must* attend.

58–59. *Manufacturing Drawing*, (fabrikzeichnen,) neat, destined for such as work at Chemnitz in manufacturing establishments, but which may be attended also by proper pupils of the Gewerbschule, 4 hours in the evening, in two sections. In the lower, (11 pupils with three of the middle school,) drawing in general is taught; in the upper, (41 p.,) the pupils are practiced in drawing or sketching of ornaments concerning their particular trade, etc.

Besides, the principal, Professor Schnedermann, (teacher of chemistry,) there are 16 teachers, three of whom bear the title, professor.

In I there are 9 pupils for the full course—4 for single branches.
" II " 37 " " 5 "
" III " 65 " " 6 "
" IV a " 42 and in IV b 40.

With the Gewerbschule, is joined what is called, **Baugewerkenschule**, *i. e.* a school for carpenters and masons, (journeymen,) lower class: 29 pupils.

Arithmetic: 6 hours from the first rules as far as quadratic equations.

Geometry, 4 hours; *General Architecture*, 8 hours; Lineal and ornamental *Drawing*, 4 hours; Doctrine of *Projection*, 4 hours; *German*, 3 hours. Upper Class, 31 pupils.

Mechanical Physic, 6 hours, with particular attention to architecture. Doctrine of *construction*, 6 hours; *Sketches of Architectural Plans*, 4 hours; *Modeling*, 6 hours; *Embossing*, 4 hours; *Drawing*, 4 hours; *Perspective*, 2 hours; *German*, 2 hours.

and a so-called

Mechanische Baugewerken and Werkmeister schule.

Third class: 18 pupils; (Miller's machine builders, locksmiths, etc., journeymen.) *Arithmetic*, 6 hours; *Geometry*, 4 hours; *German*, 3 hours; *Drawing*, 4 hours; *Geometrical Drawing*, 8 hours; *Natural Philosophy*, 4 hours.

Second class: 17 pupils.

Mathematics and Mechanics, 12 hours; *Machine Drawing*, 8 hours; *Surveying*, 4 hours; *Mechanical Technology*, 4 hours; *Model Drawing*, 4 hours; *German*, 3 hours.

First class: 13 pupils.

Machines, 8 hours; *Mechanical Drawing*, 8 hours; *a*, *construction of rails*, 4 hours for railing; *b*, *spinning and weaving*, each in 4 hours; *c*, construction of *pipes and wells*, 4 hours; *Drawing*, 4 hours; *Embossing*, 4 hours; *Model Drawing*, 4 hours; *Book-keeping*, 2 hours.

Sunday School in Chemnitz.—There is a Sunday school in this large manufacturing city, with 1284 students, arranged in 40 classes, viz.:

13	classes in	Drawing,	with................	440 pupils,
10	"	Writing,	"	396 "
4	"	Writing,	"	121 "
2	"	Reading,	"	48 "
1	"	Natural Philosophy,	"	20 "
3	"	Composition,	"	110 "
1	"	History,	"	25 "
1	"	Geography,	"	25 "
1	"	Book-keeping,	"	34 "
1	"	English Language,	"	12 "
2	"	French Language,	"	23 "
1	"	Stenography,	"	30 "

The expenses of the school amounted in 1856 to 1.500 thalers.

New Regulations respecting Normal Schools.—The department of public instruction has issued new regulations for the normal schools, in the same general spirit of the Prussian regulations, but not quite so conservative.

Honor to a Successful Teacher.—Dr. Georgi, director of the Institution for the Blind in Dresden, has been presented with the Danebrog order, by the King of Denmark—the institution with that at Paris having been reported as the best in Europe, by a commission appointed to examine all in different countries.

Burgher School at Leipsic.—This school embraces in its organization two burgher schools, and a real school, under Dr. Vogel as principal, assisted by one vice-principal, 70 male and 8 female assistants. In 1800 there were 2511 pupils in 53 classes. The real school had 174 pupils, under 12 teachers, and two "candidates," as assistants. These candidates, have passed favorably their examination as teachers in high schools, and are now teaching for one year on trial before they can be appointed to a place as principal.

XVI. PUBLIC INSTRUCTION IN BAVARIA.

[Translated for the Journal, from Schmid's Encyclopedia of Education.]

THE kingdom of Bavaria contains, in the two separate portions into which it is divided, a population of somewhat more than four and a half millions, upon an area of 29,637 square miles. Nearly three-fourths of these are Catholics; the remainder, except 56,000 Jews and about 8,000 of smaller Christian denominations, being Lutherans. The people are of German blood, descended from three ancient tribes, the Boioarii or Bavarii, the Franconii or Franks, and a branch of the Suabii; except that a few hundred thousand, in the north-east part, are of Slavonic blood, and there are, besides the Jews, about 3,500 Frenchmen in the Palatinate.

Bavaria was, in the time of the Roman Empire, included in Vindelicia and Noricum; after the fall of that empire, was under the dominion of the Ostrogoths and of the Franconian emperors; was governed by native dukes of the house of Agilolf to the end of the sixth century; then by various descendants of Charlemagne; then by one or another baron; and in 1150 came under the dominion of Otto von Wittelsbach, by the descendants of whose house it is yet governed. They were dukes until 1623; were then entitled electors until 1805, when Napoleon conferred on the reigning elector the title of king, which he has since possessed.

The territory of Bavaria may be divided (disregarding its political organization,) into several regions, *viz:* 1. The southern, a plateau sloping from the Allgau Alps to the Danube; having a rich soil, and being almost entirely agricultural, though containing great undeveloped mineral wealth, and a few good manufactories; having few cities, of which Munich, the capital, Augsburg, and Passau are the chief, mostly Catholic; and with a grade of education comparatively low, and of morals absolutely so. 2. The region north of this, between the Danube and the Maine; hilly, with poor soil on the high ground, and rich valleys; and wealthy and prosperous, from the intelligence, energy, and enterprise of its inhabitants. More than two-thirds of them inhabit the cities, which are numerous, and some of them very old and very celebrated; as Nuremberg, Bamberg, Ratisbon, (in German *Regensburg*,) Würzburg, &c. These are all thickly inhabited, and crowded with industrial and commercial enterprise; and the condition of education is good and progressive. The population is about half Catholic and half Protestant. 3. From the Maine to the northern frontier, the country and people are in general similar to those of the second division; but the Catholics are more numerous and the cities less so, and the population is thinner. 4. The Rhenish Palatinate, beyond the Rhine, of which the eastern portion, on the river, is a very fertile plain, and the west mountainous, but also having a rich soil. The population is quite dense, and towns are numerous, although there are but few cities; and the occupations are agriculture and manufacturing.

The political division of Bavaria is into eight provinces, called *kreisen* or circles, and under provincial authorities called governments; *viz.*, Upper Bavaria, Lower Bavaria, Palatinate, Ratisbon, Upper Franconia, Middle Franconia, Lower Franconia and Aschaffenburg, and Suabia; varying much in extent, but less in population.

Of the races of Bavaria, the Boioarian or Bavarian have always been farmers and cattle-raisers, little celebrated for commerce, industry, art, or literature; the Franconians are inventive, industrious, and politically active; and the Suabians are the most poetical, philosophical, and artistic race of Germany.

The government is a constitutional monarchy, with two legislative chambers, and an absolute veto in the king.

The system of public instruction may be considered under the following heads:—

I. PRIMARY OR COMMON SCHOOLS;

II. SECONDARY SCHOOLS, including High Schools for Girls, Gymnasia or Latin Schools, Real Schools;

III. SUPERIOR SCHOOLS;

IV. INSTITUTIONS FOR THE ADVANCEMENT OF SCIENCE AND THE ARTS;

V. SUPPLEMENTARY SCHOOLS.

I. THE PRIMARY OR COMMON SCHOOLS.

I. *History.*—The common schools of Bavaria may be said to have been based on the electoral ordinance of 23rd December, 1802, which requires all children, from 6 to 12 years of age, to attend school. This was followed, January 13, 1803, by an admonition to the clergy, in which they were called on, in strong terms, to look to the promotion of school institutions, and the organization of the inferior supervising authorities, such as local school committees and inspectors; and a set of instructions for these latter were added. In 1804-6, a scheme of instruction, for the city and country elementary schools, was promulgated which far exceeded any possible attainments. Its subject-matter was divided into six chief heads: God, man, nature, art, language, number and size; in the manner of the time, it distinguished between religion and morals, overburdened the common schools with real studies, confounded heterogeneous subjects (such as hygiene, prevention of sickness, intruction in manners and gymnastics;) and would have every thing begun at once. "A sure and enduring basis is to be laid," it says, "for all the knowledge and skill which are of special importance in the usual civil and scientific life." This is the beginning of *nimium et multa.* This criticism *may be confidently* made; for, in the year 1811, under the ministry of

Montgelas, a second edition of this plan appeared, with a fuller explanation and instructions, which contained a still keener criticism upon it. In this, the exercises for the memory were restored to their right place, and the heterogeneous elements separated. These two documents, viz., this Explanation and Instruction, breathe the spirit of wise and sound pedagogical principles. They constituted, in the year 1811, a starting-point for the Bavarian common schools. From this seed there sprang many other important ordinances upon the proper scope of the ministry, instructions for the supply departments of the circles, for local district inspection (in 1808,) for erecting teachers' seminaries, and education of common school teachers. In the year 1818, Bavaria received a constitution, which was of significance to the schools, only so far as their rights were required to be secured by edicts, supreme ordinances, &c.; since the sacred rights (*jus in sacra*) of the schools were reserved to the control of the authorities; and, accordingly, by the dismission of the general assembly, May 23, 1846, distinctly refused the co-operation of that body, in fixing the salaries of teachers, and the length of school hours on work days and feast days.

What King Max began, King Ludwig perseveringly continued. The activity of the Wallerstein ministry forms an epoch in the history of the Bavarian common schools. Considering 1802 as the date of their foundation, and 1808 and 1811 those of the most necessary organizations and reforms, the Wallerstein period is pre-eminently one of organization. The appointment of district school inspectors, in 1832, falls within this period. Statistical returns from the common schools (officially called "the German work-day schools,") were required anew, including returns of salaries, school visitation, list of qualifications (of teachers.) and annual report on the school. The *regulative* of 11th June, 1809, on the education of teachers, was repealed, and a new one issued, January 31, 1836. This extraordinary activity has occasioned the reproach of overadministration to be brought against the Wallerstein ministry; more especially with reference to the schools of literature. So much is certain, that, especially in school affairs, the persons employed in teaching are the most important interest; and that too much and too long-continued labor in writing, must interfere with the oral labor, which is the special vocation of teachers. But that ministry is certainly entitled to the credit of having undertaken and skillfully performed a difficult task, whose result is, that we of the present day, can easily comprehend every thing relating to the schools, from the very exterior of the official organization inward.

The decided and severe ministry of Abel, which governed the schools by strict ordinances, and the strict enforcement of those already existing, aroused in Bavaria a controversy on confessions. It required of the schools a distinct position on the question of confessions, for the sake of impressing a religious character on them. It set earnestly about securing a union of schools and church, and an extension of church influence over the schools, but without sacrificing to the church, any of the privileges of the state. It confined the German schools within the limits of their appropriate departments. An interesting rescript is that of March 22, 1842, on the exclusion of instruction in French, from the female burgher schools. "Unfortunately, only children of the higher classes need to understand French; and it is forbidden to teach it in the schools to others. The girls must become German wives, or must remain German maidens." The royal ordinance of 8th May, 1841, refuses to the teachers of common schools, the character of public officials. Instead of the previous sounding name, the term "preparatory teachers" is used; and instead of "*praparanden*," "school apprentices."

Against these and similar repressive ordinances, an opposition was kindled, from the spirit of the year 1848; and here, as elsewhere, there was called for a separation of the schools from the church, an elevation of the position of teachers to an equality with that of officials, as well as a corresponding rate of payment. These tendencies, as they in fact developed, did not certainly come from Christian feeling; but their operation has actually led to a useful result. The consistories, since that time, are earnest in reminding the clergymen of their duty, in exercising a diligent supervision of schools and instruction. The desire of the teachers to be on the footing of servants of the state, has not as yet been granted. The latest rescript, of February 26, 1857, declared anew that they were in the service of the communes, not in that of the state; but the government interests itself with much favor for the increase of their salaries, and this subject is occupying it even now. Thus, we may designate the period last past as that of care for the teachers.

New school-houses are springing up every where, especially for the so-called supplementary schools (*Nebenschulen.*) At every mile, and even at shorter distances, they are found, in some of the circles; and even where want of means prevents new school-houses from being erected, the school authorities have at least procured appropriate dwellings in connection with them; whereas, previously, the school-room was the teacher's only tenement during the day, and the attic at night. The governments have afforded important aid to poor communes, from the funds of the circles. The latest regulation (of May 15, 1857,) which has been published, lays down new principles, for the religious duty of school teachers, in a truly Christian spirit, from the preparatory instruction, up to the age of employment in a regular vocation. Thus, Bavaria, and its present government, are entitled to the credit of having done their duty to the schools, not only on paper, but in fact. We have not here room to discuss the influence of the educators Stephani, Graser, and Niethammer, on the operations of the government, supporting and promoting them, and sometimes hindering them.

II. *General Outline of the School Laws and Organization.*—All children, from 6 to the end of the 12th year, unless coming under some exception, must attend the schools (ordinance of December 23, 1802.) The time of attending the work-day schools, for Protestant children, is up to the day of confirmation. This takes place (since 1839,) in the

13th year, (previously in the 14th,) on the 30th of April. Any one who is 13 by the 30th of the month, may be confirmed, if properly prepared. In extraordinary cases, a private confirmation is given. After the time of attendance at the work-day schools, begins that at the Sunday schools; previously until the 18th year, now until the 16th. No one can receive an appointment, or conclude a marriage, without satisfactory evidence of having attended the Sunday (or feast-day) schools. Such attendance is not required during attendance at a Latin school or a gymnasium. (Law of September 12, 1803.) Neither apprentices nor journeymen are excused from it. Up to the year 1856, proposals for lengthening the attendance at the work-day schools, and shortening that at the feast-day schools, have been decidedly declined. In that year, the former term was extended, for Catholics also, to the end of the 13th year, with as little disturbance as possible of existing relations, and the latter term shortened, for those of all confessions, to two years. The obligation to attend instruction in Christianity to the 18th year, it has thus far been refused to shorten. In order that school attendance may not be evaded by private instruction, real or pretended, this latter is, by a law of March 27, 1806, together with institutions for it, placed under strict control. Permission to give private instruction, is to be granted by the inferior authorities. In order that no child may evade attendance, by going into another school district, even for a short time, there is a legal examination, at which certificates are required.

School attendance being a universal obligation, the necessary steps for the organization and maintenance of sufficient schools, must naturally be taken. These, for primary instruction, are required of the school communes, which often include several political communes. Private obligations to make such provision (of foundations, patrons, &c.,) remain in force. The State is also bound to fulfill promptly its own obligations, under special laws (Law of February 18, 1843;) but it endeavors to free itself from responsibility for primary instruction generally. A school fee of two kreutzers weekly (and more in the larger towns,) is required from parents, where there are no free-schools or special foundations. Each parish must pay for poor scholars, from the poor's funds. It also provides all school necessaries (wood, &c.;) pays the taxes on the dwelling, ground, and landholders' taxes, whenever the income of the teacher does not exceed, if in a village, 300 florins, and, if in a city, 400 florins; and it is responsible for erecting buildings, wherever special rights and obligations do not vary the rule. For the tenement of the schoolmaster and sexton, in special localities, the school funds are holden; elsewhere, the school funds pay three-fourths, and the church funds one-fourth of the amount. This partition, however, is made only where the school-room is in a separate house; the division being equal in other cases. The parish must also provide a proper salary for the teacher. But where the means of the parish render it impossible to provide such an income, there only may application be made for aid, to the funds of the circle; and if the assistance granted from the central funds of the circle is not sufficient, then a tax may be levied upon the vicinity. If a tax on the parish is necessary, to procure school necessaries, it is laid in the proportion of the ordinary taxes; but the rate for school utensils is laid according to the number of children. The parishes are not always large enough to support a school apiece, and several are therefore sometimes consolidated into one school-parish; a plan which is often a hindrance to successful co-operation, especially when the several parishes, thus joined, are under the jurisdiction of separate courts and pastors. The increase of population every where, and especially in the manufacturing districts, has caused a disproportion between the number of pupils and teachers. The regular proportion is 60 to one, and that of 100 to one must not ordinarily be exceeded; but it has often risen to 150 and 180, chiefly because the expense of the first assistant has to be borne by the teachers themselves. Peculiarities of location and climate, again, often render it necessary to have small schools, of not more than 25 pupils. In neighborhoods mingled of those of different confessions, confessional schools are organized, whose expenses are borne by those of the respective confessions, so far as extraordinary ones are incurred; or, if there is a communal fund, the necessary funds for all parties are derived thence. A law of May 10, 1810, provides for the obligation to attend school, in one's own school district. The district is bounded by the limits of the parish, and all school children living within it, are bound to attend in that district. Where there is only one school, this is true, without regard to their confession; religious instruction being, in that case, intrusted to a separate teacher. In order to avoid hurting consciences in such cases, special permission will be given to attend a confessional school, if there be such in the neighborhood.

The organization of the higher authorities of school inspection has been repeatedly changed. A royal ordinance of March 16, 1849, re-established the ministry of the interior for church and schools; which consists of a managing minister, 3 ministerial councilors, 2 high church and school councilors, and the necessary office force. One of the ministerial councilors will fulfill the duties of general secretary, by appointment of the minister. Under the charge of this department, are all matters relating to religious and moral training, and national education, institutions of science and art, the common schools in particular, institutions for educating teachers, the preparation of documents relating to the finances, and (within the limits of the fixed appropriations,) the grants of public money for these purposes.

Under this ministry are the eight governments, within as many circles, whose duties are defined, by the ordinance of December 17, 1825, to be, the charge of promoting the school and educational system; maintenance of the existing laws and ordinances; supervision of all schools within the circle, except the higher institutions in the capital, and the universities; oversight of the funds devoted to instruction (revision and *super-revision* of the accounts;) appropriations under the fixed amount of funds for the schools; procuring of proper school buildings; organization of new common schools, discontinuance or consolidation of those already existing, determination and rectification of school districts; procuring proper school returns; examination of all persons desiring the office of common school teacher; appointment of all teachers of common and burgher schools, as well in the preparatory schools, unless the right of presentation belongs to a third person; necessary removals, pensions, &c.; supervision of conduct of persons employed, and over school conferences; inspection; enforcement of discipline. Appeals from decisions of controversies between teachers and pastors or parishes, as to the relations of the schools, school regulations, charge of building, &c., were formerly put in charge of designated school councilors of the circle; at present, however, they are referred to such councilors as the president may think most suitable. As, however, the jurisdiction of referees over school affairs in the circle seemed inadequate, a circle school inspection was appointed in 1832—consisting of four circle school inspectors, unpaid, and removable—chosen by the presidency of the circle, from the rectors, professors, district and local inspectors, &c., residing in or near the capital town of the circle, and confirmed by the ministry of the interior. These attend the sittings of the governments of the circle for the chief questions relating to instruction, having a vote therein; and as a special committee, presided over by the president of the circle, and with the aid of the circle referees, they determine what resolutions shall be published upon the annual school reports. The common schools of every two (by a late order four.) school inspection districts, must be visited annually, either by a school referee, or by one of the school inspectors.

The district school inspection (usually including the schools of the jurisdiction of a provincial court, from 10,000 to 25,000 inhabitants,) together with the district police, are the immediate subordinates of the government. (Instruction of September 15th, 1808.) The district school inspector, usually a dean, or some other ecclesiastic, has the following duties: enforcement of the external school ordinances; improvement of the internal condition of the schools; direction of the local school inspection. They inform themselves of the condition of the schools by an annual journey of inspection. For larger towns, whose size requires several city inspection districts, is appointed a city school commission, (or joint school commission,) composed of the ordinary members of the city school board of inspection. These are, however, only appointed in cities of the first and second classes, which are under the immediate control of the government. The immediate subordinates of the district board of school inspection, are the local boards of school inspection. In each parish, or its dependence, having its own school there, is such a board; composed, in parishes without a magistrate, of the clergyman, the overseer (*Ortsvorsteher*,) and two or three delegates from the parish committees; in parishes containing magistrates, (that is, town authorities, or the corresponding officers in the county,) of the mayor, the clergyman, and from one to four deputies from the councilors of the magistracy. Where several boards are needed for city districts, they are made up of the clergyman of the district, or another inspector, and a councilor of the magistracy, to whom may be added from one to three district overseers, as extraordinary members. All the ordinary members of the city district boards of inspection together constitute the joint school commission. The authority of the local authorities extend to every thing relating to the internal or external relations of the schools; in internal affairs, as to discipline; in external ones, relating to school land, buildings, furniture, inventory, order of premises, proper arrangement of the school-room, local school funds, situation of the teacher, means of supporting poor children, prizes. In charge of the local boards of inspection are teachers, assistants, and other subordinate assistants, parents of pupils, and all residents of the place who stand in any relation to the school; and they may summon all such to meet together before them. They have the right of blaming or praising the teacher, and of rewarding him from the school funds. Their regular duties are, 1. Monthly school conferences, on the first Monday in the month (to attend to occurrences of importance, neglects in relation to the schools, complaints, ordinances from superiors, &c.,) of which reports are made; 2. Annual reports on the schools; 3. Repeated and diligent visitation of the schools, of which reports must be entered in their note-books.

The united operations of the school inspectors and police of the district are so arranged that the former have charge of the strictly technical management of instruction; but school affairs of a mixed character, as those relating to the bounds of the district, attendance, building, funds, &c., are referred to both together; and the inspectors, except in reference to buildings, have the initiative.

The supervision of the schools is especially conducted by the legal visitations, which are, *a*, of the circle authorities and circle inspectors. The schools of at least four of the circles must be visited thoroughly, with reference both to their internal and external affairs, in the months of February, March, and April. The proceedings for the visitation are most fully prescribed (by a law of 1833,) even down to the form of the report. They are made by the commissary, in presence of the chief police officers, the district and local school inspectors, teachers, assistants, and friends of education. The wish of the king is, that the principal effort of the inspectors shall be "to bring back the course of instruction from the tendency which has of late crept in to mere training of the understanding, and superficial overknowledge, to a proper development of the soul and heart, and something of real and permanent value;" *b*, annual visitations by the district police authorities and inspectors. These are bound by a form of visitation prescribed in detail, which includes, in a tabular form, 1. Examination on subjects of instruction; 2. Their result; 3. Further observations; 4. Defects; 5. Inspection of school localities; 6. Suggestions, requests, difficulties; 7. Special observations *not* proper for publication. The local school inspectors report on

1. Variations in school statistics; 2. History of the period past; 3. Condition of school, and attendance; 4. Personal matters; 5. Order and arrangement; 6. Discipline and instruction; 7. Resources; 8, 9. Wishes and suggestions of inspectors and teachers; also to be in a tabular form, and made at least four weeks before the examination. There are, also, additional visitations at least four times a year, since 1851; for which about one thousand florins a year is allowed from the funds of the circle.

It is to be questioned whether so many visits operate favorably on the schools. It is a constant state of examination, which does not permit the schools to do any quiet work, tends to cause forcing of the powers of the pupils, and leads to a system of driving, for the sake of shining with knowledge rapidly taken on, instead of acquiring it by methodical acquisition. Among the supervising authorities must also be reckoned the central school-book printing establishment, which dates even from the last century, and which is intended to furnish for the common schools, and latterly for the higher schools also, "systematical" books. A ministerial edict of July 21st, 1849, diminishes the privileges of this establishment, by declaring that it has no monopoly. It is obliged to distribute, if its profits allow, one hundred and fifty florins' worth of books to each circle; and its further profits go to the support of widows of school teachers.

An important department of supervision relates to the qualification of teachers, and of subordinate supervising authorities. The table of qualifications dates from 1836, and includes statements of personal, official, and domestic relations. and opinions on fitness, knowledge, activity, official efficiency, general deportment, according to the following scale of six grades:—Class I., distinguished attainments; being, *a*, remarkably good, and *b*, very good; Class II., sufficient attainments; being, *a*, good, and *b*, tolerable; Class II., deficient attainments; being, *a*, slight, and, *b*, bad.

In this decision, reference is made to the record of qualifications, at the close of preparatory instruction, at leaving the teachers' seminary, at the examination for appointment, and during actual service. The qualifying authorities are: local and district inspectors, district police authorities, and the circle government. To obtain an alteration of the decision, a special government permission must be had; and the examination must be repeated at the end of five years. The form for qualifying local school inspectors goes into the utmost detail, and includes seventeen heads. This full organization of supervising authorities secures to the state a very complete control.

Thus far, nothing has been said of the rights of the church over the schools. The schools are considered state institutions, for the supervision of which the church is made an instrument, although the church authorities have no right as such to that office; and while, as a general rule, the district school inspectors are chosen from among the deans and pastors, still no ecclesiastical dignitary has, as such, a seat as school inspector; nor has he in the higher school council. The edict upon the internal church affairs of the united Protestant congregations gives to the high consistory and the consistories the supervision of Protestant religious instruction in the schools. All other instruction is in the department of state police, and in charge of the governments and of the ministry of the interior. But in circles where the Protestants are most numerous, the school referee is to be a Protestant, and one of the high councilors of studies must be a Protestant. (See consistorial ordinance of 1809, in the Pastor's Manual.) The bishops stand in a similar relation to the school. By appendix 11 to the constitution, they have the right of supervising religious and moral instruction, and the religious condition in institutions of religion and instruction. Their wishes will be ascertained by questions on the training of teachers, and conformed to as far as possible; and the same in the publication of important laws relating to the schools, so far as concerned with instruction in religion and morals. Text-books of religious instruction are, also, to be subject to their approbation. See ministerial rescript of 8th of April, 1852.

III. *Number, and Attendance of Schools.*—There are in Bavaria, (according to Hermann,) 4,810 Catholic schools, with 5,796 teachers, and 307 female teachers; 2,150 Protestant schools, with 2,669 teachers, and only 8 female teachers; 153 Jewish schools, with 157 teachers: in all, 7,113 schools, with 8,622 teachers, and 315 female teachers. These schools are attended by 284,788 male work-day scholars, and 290,426 females; by 178,713 male Sunday-scholars and 192,348 females: in all, 946,275. Their income is 2,912,500 florins: being, from the state, 404,877 fl., from the parishes, 1,103,789 fl., from foundations, 596,089 fl., from private sources. 807,745 fl.; with an expenditure of 2,543,340 fl. to persons, and 356,108 for property. Non-attendance at school, by any child, can only happen by great negligence. Thus, in a population of about four and a half millions, those attending the work-day schools are about 1 soul to 7 3-5, and the Sunday schools 1 to 12; being 13 1-4 *per cent.* of the former, and 8 1-4 *per cent.* of the latter: in all, 21 1-2 *per cent.* There are 80 work-day scholars per school, and 67 scholars to one teacher. In the year 1835-6, the number of Catholic schools increased by 476, and of the Protestant by 383. The expenditures in that year, of state money (from funds of circles) increased, by 194,594 fl.; from parish funds, by 656,535 fl.; from foundations, 133,894 fl.; and, from private sources, it decreased by 26,295 fl. Total, an increase of 958,729 fl. The number of school children increased by 64,438. The proportion between county and city schools, is stated only so far as the cities are immediately under the circle governments. There are in Bavaria, east of the Rhine, in 29 "immediate cities," 197 schools; and, in 239 police districts, 5,478. In the Palatinate, there are, in 12 land-commissariats, 1,438 schools. Poor-schools exist, commonly, only in the large towns. The fact that the poor-children are penned up in separate rooms, and that the basis of a caste distinction is thus laid, even in the school world, may indicate a saving in the money accounts, but, educationally, it is certainly of evil tendency. All the children of the people ought to be educated together, without any such early distinctive impress upon part of them, of public paupers. Schools of mechanic trades have not yet spread much in Bavaria, even where manufactures are most prosperous. The ordinance of January 15th, 1840, modified in August 1854, determines the factory hours of children of the work-day school age, exercising a Christian care over their health and bodily development. The working hours of the youngest children (of ten years old,) are, at most, nine hours, between 6 A. M. and 8 P. M., with two hours of intermission, in three separate portions. The same law requires their attendance upon a public or private school; which is not to begin before 6 A. M., or to last after 6 P. M.; and which must not contain more than fifty children each. But the concession is made to the manufacturing interest, that only three hours daily are required for school inspection. But how short is the whole school life of a factory child! It is thus that the extension of manufacturing hinders the symmetrical development of common school instruction.

Under so favorable a condition of schools, it can only exceptionally happen that any individual, immediately after leaving school, shall be unable to read or to write as much as is absolutely necessary. But the attainments made at school, often very good, (and of the city schools even more might be said,) are preserved only where the graduate's occupation is such as to furnish continued practice. Where the external senses and physical powers are chiefly occupied, much knowledge and many attainments are lost. Even the Sunday schools show a continual retrogression, which their few hours' duration can not prevent. The greatest loss, however, is of real knowledge; which is often hurriedly crowded in upon the memory shortly before an examination, before the external or internal faculties are well developed; in which case, all such acquisitions very soon become confused together. Wherever a religious life prevails, maintained by a steady attendance upon divine service, reading God's word, &c., the remainder of the school acquisitions are found to be more fully preserved. Military authorities complain of the number of recruits who lack the most indispensable knowledge; but this will not represent an average for Bavaria; because the sons of families which expend the most care upon instruction, often avoid military service, their places being filled from the lowest class of people. Many complaints are also made from jails and houses of correction of the entire destitution of school knowledge of the criminals; but these are quite as frequently abandoned men, who defy both the discipline of the schools and the punishments of the prison. Ought not the statistics to show that there are as many educated criminals as uneducated? These defects of education show that the common schools can not accomplish what is in some quarters required of them. Thorough practice in reading, writing, and arithmetic, is better than wandering at pleasure in the labyrinth of real studies. If the present extent of studies is not the right one, even under the best organization and methods, still it is evident that they produce too much good to allow of wishing them circumscribed.

IV. *Interior organization of the schools*—The basis of the school subdivisions is a triple classification of city and country schools: namely, preparatory class, and class I., (the separation of which gives a division into four classes,) and classes II. and III.; the latter three being more often named high, middle, and lower class. These are subdivided as the number of scholars and of teachers may admit. In the larger cities, the three higher classes are divided into seven, one for each year; and these, again, into boys' and girls' classes; so that we have the following table of classes in a city school:—

A. I. preparatory class, usually both boys and girls, 6th to 7th year.
II. lower class, boys, girls, division a, 7th to 8th year.
" " " " " b, 8th to 9th "
B. III. middle " " " " a, 9th to 10th "
" " " " " b, 10th to 11th "
C. IV. higher " " " " a, 11th to 12th "
" " " " " b, 12th to 13th "

On this plan, for instance, are organized the schools in Augsburg. In Nuremberg there are 74 school-classes, with 63 definitive teachers, and 11 assistants. In Fürth there are supplementary classes for the weaker scholars, who can not keep up with the rest. But, in many schools, one teacher has to instruct all three classes in one room. The time of instruction is five hours daily, in the so-called whole schools. Wednesday and Saturday afternoons are vacations. In the section, or half-day schools, which, however, are established only exceptionally, each section must be instructed three hours daily, in which case the teacher loses his golden rest of Wednesday afternoon; and, on Saturdays, two hours each: in all, thirty-four hours a week. Two or three hours of instruction are required, daily, in the summer schools in the country; and in sectional schools, the higher section has two hours, and the beginners one—beginning, where practicable, at 6 A. M. The summer school begins May 1st, and ends November 1st. The vacations of the country schools come in harvest; two weeks for the early harvest and two for the later, as the locality may require. City schools have only fourteen days' vacation. The regulation course of instruction of 1804 and 1811 gives a special course of instruction and a time-bill, which are given out at examination, and must not be varied from. Single city school commissions and district boards of inspection work after a uniform plan, arranged on the basis of the regulation course, and approved by the king. Every course of instruction must include the following subjects.

1. Religion. Within the Lutheran church, the limit of this is a knowledge of the six chief portions of Luther's small catechism. Text-books are, Luther's small catechism, with texts as comment and explanation for teachers; Dr. Bockh's Guide; Löhe's House, School, and Church Book; H. Caspari's Luther's small Catechism explained, (this for the children;) Irmischer's Guide, and Extracts from Spencer's Catechism; Wucherer's Guide through the Catechism, &c. The united

Palatinate uses Ebrard's Catechism, compiled from the Heidelberg Catechism and Luther's The Catholic church uses the Diocesan Catechism, by a Jesuit, which is usually called the German Catechism, and whose usefulness is highly spoken of.

2. Biblical History. From Zahn's Biblical Histories, and the Calw "Twice two and fifty;" the Catholic church, after Christoph von Schmid.

3. Memorizing; of matter from the Bible, catechism, and hymn-book. The number of texts to be learned is 485; of hyms, 40; J. F. E. Buchmann's Plan for Learning Texts by Heart. For the preparatory classes is used the so-called God manual; or, True First Instruction about God.

4. Reading; which, by the law of April 21, 1811, holds the first place, and is taken as the especial measure of the periods of instruction; technical reading belonging to the first class, logical to the second, and æsthetic to the third; the latter, however, being pursued only where the children are within an æsthetic circle at home. Manuals; Bavarian Instructor and Reading-book; Ludwig and Heinisch; Instructor and Reading-book. Poland; Häberlein, Schmidt; First Instructor for Children; Krumbacher's Reader, &c.

5. Writing. In the first class is required the writing of single letters, syllables, and words; in the second, continued technical instruction, with special reference to calligraphy; in the third, especial reference to calligraphy, after the model copies prescribed by the law of Bavaria.

6, 7. Orthographical exercises (spelling by writing, written sentences,) in connection with practical grammatical exercises (without any special text-book,) beginning in the 2nd period, and extending up to separate written documents (letters, accounts, receipts, &c.) The subject-matter is prescribed in detail for the three classes. The required books are, Guide to Calligraphy and Dictation Exercises, Danheimer's Kempten. Parts of the calligraphy from the former, with copies, may be had in Bayreuth and Nördlingen, and copies at the central book establishment. The instruction in German is based upon the Manual of Heinisch and L. Offinger, Engelbrecht, Pflug, F. X. Kluss of Munich, &c.

8. Arithmetic. As far as the rule of three, the chain rule, and the easiest fractions. Manuals; Arithmetic for the Bavarian Schools, from the central book establishment; Henner's Head and Mental Arithmetic; Erhard's Scholar in Arithmetic; Collection of Problems for the Nuremberg Common Schools; Arithmetic for Home and School, &c.

9. Geography. The law says of this, and particularly of that of Bavaria, that "It is no recommendation to a teacher, that he promotes instruction in geography at the expense of other studies." The present king is much interested in the study of Bavarian history. For this purpose prizes are given, being copies of Twelve Pictures, from the Lives of Bavarian princes, and (more for the Catholic schools,) History of Bavaria in Pictures, by Thomas Driendl. Many histories of the country, for common schools, have lately been produced, both in prose and verse;

but a well-arranged chronological series of clear narratives, from the history of Bavaria, is yet needed.

10. Singing. The love of music, especially for church music, and strictly national popular song, is required to be maintained and promoted as much as possible. Manuals are, Church Choral Book; Kraussold's Collection of Songs; Small Collection, by several teachers in Erlangen, &c.; Hohmann's Practical Course of Instruction in Singing, &c.

11. Drawing, formerly obligatory through all three periods, is now carried only far enough to afford a means of distinguishing talent; and is studied only on Sundays and feast days. There are about 26 special drawing schools, in which are employed, at present, about 260 teachers.

Industrial schools are organized in connection with the common schools, but as yet most advantageously in the cities. At present there are 1,550 industrial schools, with 1,963 teachers. Each school must have its industrial garden. The course of instruction is the same for both city and country schools; and, "although this is arranged chiefly for the city and burgher schools, their larger scope has not at all interfered with their application to the country schools." Different courses would be as great an evil as a different education for city and country school-teachers. This would bring about an unfriendly distinction between the city and country population; and, moreover, the great spread of manufacturing establishments would make it difficult to fix a line of distinction. One course of instruction, one mode of training teachers, is the rule, and, in practice, careful reference to the very various circumstances of the life of the people. No course of lessons is prescribed, but only general principles are laid down. According to the original plan, four hours should be employed in instruction about God, three on men, four on nature, three on art, six on language, four on number and size; in all twenty-four. According to the plan, as modified in 1811, the lessons, in Nuremberg for example, are arranged as follows:—

	Preparatory Class.	Lower.	Middle.	Higher.
Religion	1	2	2	2
Biblical History	2	2	2	2
Reading	5	6	4	2
Writing	5	4	3	2
German Language	—	3	4	6
Arithmetic	4	5	5	4
Singing	1	1	2	2
Geography	—	3	2	2
Natural History	—	—	2	2
History	—	—	—	2
Intuitional Instruction	2	—	—	—
	20	26	26	26

The methods of instruction vary, according to the theories which have prevailed. The views of Stephani and Graser still have influence;

but a careful eclecticism finds favor with the authorities, who judge by results, without compelling the use of any method. It is a rule that every school shall begin and end with prayer, according to the formula. The "*Ritual for a Complete Morning Service*," (not very much used,) contains, 1, salutation; 2, singing; 3, reading the Bible; 4, prayer and biblical instruction; 5, singing; 6, benediction, and a short pause. This is commonly shortened. Religious instruction is given two hours a week, by a minister, and four by the teacher; the arrangement being such, that the latter has charge chiefly of exercises in memory, biblical history, and explanations of words, and the former of the religious instruction proper. Punctual attendance at church is most strictly enjoined upon children of school age, and they have a separate place in church, with a teacher. The children in the common schools are but little employed in studying at home; the schools being to be made not audience-rooms, but instruction-rooms; and the hardest of the work not being to be put off on home. School diaries, for the entry of any ideas which may occur, are used here and there, but not generally; the note-books contain the history and chronology of each school, and the regulations made in it. The scholars are graduated after a regular examination, held once a year, by the district board of inspection; and is evidenced by the certificate of graduation, which must be produced at marriage, taking possession of property, &c.

The efficiency of the schools is to be felt outside the school-room, but without interfering with domestic rights. It is not the domestic misdemeanors of the scholars, but those committed in their intercourse with each other on the public highways, in a sphere as near to the schools as to the home, that the schools are to have cognizance of. The schools possess a portion of police authority, in order that the children may not fall into the hands of the police. Parents who take their chilren to dances, &c., are warned by the local school inspection board; and, in case of a repetition, they may either be punished by the same authority, or handed over to the police. The school discipline is not a pedantical application of a school code carried into detail. The school ordinances are only single disciplinary determinations, on tavern-haunting, &c. While a Draconian strictness is not used, that false philanthropism is avoided which would manage the often very unrestrained body of scholars by allurements and caresses. Corporeal punishment is permitted, but the utmost caution is enjoined. Boxes on the ear are forbidden, and punishment by blows is to be resorted to only in the extremest necessity, upon an order from the school authorities, and in the school; the school discipline being a branch of the disciplinary, not of the police, penal authority. It was a former fashion to operate upon the minds of the scholars by public commendations, with public parade; and the result, in the country schools, was harmful. The choice of takers of prizes is now a much more delicate affair, as they are chosen from a general estimate by the teacher, not on special prize exercises. Common people do not understand how rightly to estimate such rewards; and they make discords at home and in the village. In some places *bretzels* (a kind of pastry) were distributed to all.

The Sunday and feast-day schools are mainly intended, according to the plan of instruction of 1811, to continue the school instruction, and to fill out such studies as remained incomplete. The studies are arranged with this view; and are the same as those in the work-day schools. In most places they can be no more than a repetition of what was learned in the work-day schools. By a ministerial order of April 22nd, 1847, they are "in the most critical period of youth, to direct their development into moral independence, and to confirm them in it; to preserve the young men from coarseness and licentiousness, to preserve in the young women a sense of modesty and honor, and to protect and strengthen the religious element in both." A difficult task! The sexes are to be kept separate, and instructed two hours each; so that, where there is only one teacher, he will have four hours work. The time is arranged in 1 hour instruction in Christianity, (in the church.) and 1 1-2 hour in Sunday-school. The mode of instruction is chiefly by lecturing. The results of the Sunday-schools (for whose benefit not much pedagogical provision has been made.) are on the whole not great; the teacher sees, from year to year, the attainments of his scholars decreasing from year to year, and the edifice, which he has built with so much pains, falling down again. While this fact ought to lead to a more effective organization of the Sunday-schools, the steps taken by the chamber during 1856, have only resulted in abridging the period of the Sunday-school course to the sixteenth year, in order to avoid interference with the domestic and industrial relations. Instead of applying a reformation, the knot has been cut. The victory is one of materialism.

V. *Condition of the teachers.* The teacher is the soul and life of the schools; and his situation therefore demands special attention. Bavarian teachers are entitled "school-teachers." or "German teachers." The common people, however, mostly use the names cantor, rector, or choir-rector, which are not officially known. The "German teacher" is either of boys or girls; of the 1st, 2nd, or 3rd class, there being no distinction of rank. The names of principal school and supplementary school (the former for the parsonage school.) are not officially recognized. Every school with a minimum income of 250 florins is a "definitive" school, and has a definitive teacher. In schools with only 200 florins of income, are employed substitutes, permanent and unmarried. There are also permanent and temporary assistants employed for sickly teachers and overburdened ones. All such substitutes and assistants are provisory only; the organization of a definitive school being always the object aimed at. The class of schoolmasters, (*schulhalter*) in what are called unorganized schools, of which the incorporated and unincorporated trades have been deprived, is almost extinct. They have mostly been admitted into the regular organization by a special examination. But few of them were removed, and those for financial reasons. The regulation of 1836 for the training of teachers was subjected, by the ordinance of 13th of May, 1857, (of which we can only give a partial account.) to a revision which will have the effect of causing those educated for the office of teacher, not only to be furnished with the necessary knowledge, but to be subjected to a thorough training of the character. The mere instruction is to be reduced in proportion, and the new training to be rendered more permanent in effect. The design of the whole course of instruction is, to educate teachers true to their faith and their church, devoted to the king and the throne, obedient to the laws, simply yet thoroughly taught, interested in their calling, and fond of the young. The education of teachers includes the preliminary, that in the seminary, and the continuation of it, after the seminary. The preliminary course is to begin at the end of the thirteenth year, or not later than the end of the fifteenth, and is three years long. The pupils, or school-apprentices, are admitted to it upon an examination by the joint commission for the district; and are taught, partly in the preparatory seminaries of the district, which are under a clergyman or school-teacher as principal, and partly put in charge of teachers authorized for the purpose, and mostly in the country or in smaller cities, that the school-apprentices may be accustomed to simple habits. The course of instruction includes, besides the studies of the German schools, music, drawing, and agricultural economy; all upon a strictly prescribed plan. Between the ends of the sixteenth and twentieth year, the school-apprentice who is physically sound, and who has the means of support, either his own or from assured sources, and also the necessary testimonials of preparation, may be admitted into the seminary, upon an especial examination, before a government commissary, a delegate of the church authority, an inspector, and a teacher of the seminary. Here he passes through a two years' course, whose chief studies are religion, language, arithmetic, writing, music, the subordinate church services, and the theory of education, with the secondary ones of general useful knowledge and drawing; all according to a strictly prescribed plan, there being eleven hours daily of instruction and exercises. The pupils all live in the seminary buildings, except Jews. The seminary has an inspector, at a salary of from 800 to 1200 florins, (the salary having recently been somewhat varied.) who is to be a clergyman; a prefect, with salary of from 500 to 800 fl.; a second teacher, with from 400 to 600 fl, who is to be a professional teacher; besides assistants from those in training for teachers, monitors from the pupils, a farmer, and a steward. With each seminary, a school of practice is connected. There are ten seminaries: in Straubing, Freising, Speier, Kaiserslautern, Bamberg, Altdorf, Eichstädt, Schwabach, Würtzburg, and Lauingen, having 13 fixed teachers and 65 assistants. There are no private teachers' seminaries. The number of pupils is as follows: 1st, Catholics, in first course 187, in second 167, in all 354; 2nd, Protestants, in first course 84, in second 80, in all 164. Total, 518; of whom seven are Jews. Expenses, 89,000 florins. About the year 1832–33, the number of institutions, teachers, and scholars increased. But there has been an increasing demand for assistants, in consequence of the hasty general organization of the schools, and the increase of attendance—there being from nine to ten years before definitive employment as a teacher. There is a want of such assistants, not very definitely felt, but leading to the reorganization of some occasional schools. The circle governments use all the means in their power to increase the number of candidates by supporting preparatory students, teachers, and pupils, and by important aid to those in the seminaries; as much as 2,500 fl., for example, being given to those of the seminary at Schwabach. The allowances are as high as 80 florins. At the same time, the supply of teachers from teachers' families, their most natural source, decreases; a large number of pupils coming from the poorer class of small mechanics. An increase of salaries will not increase the number of teachers as rapidly as is desired, for there is a feeling among the people which desires and will have a degree of material prosperity impossible in the the station of teacher. The seminaries have fourteen days' vacation at Easter, and six weeks in autumn; and there is a graduating examination before the same commission as at entrance. But few are marked I. 1; from a quarter to a third of all the candidates, I. 2; the mark III. 1, necessitates a repetition of the course; and III. 2, dismission. Pupils receiving a certificate of capacity are termed "school-service expectants," and may be employed, after one year's practice, as assistants, and, after two years more, as substitutes. All teachers in office must attend the institutions for continued instruction, under the charge of a district school inspector, or of a local school inspector, named by the circle government. These operate by conferences (at least six in a year,) written tasks, (four a year.) criticism on them, conversation, catechetical and musical exercises, books, and periodicals. The reports, with a private report are made to the circle governments. In each school inspection district, a school library is to be founded. There are no other teachers' associations. The examination for situations takes place, usually, after four years, at the seminary, before the same commission; except that, for seminary teachers, selected school inspectors are substituted. There are no examinations for promotion. An appointment is received after from nine to ten years of provisory service, unless the candidate has had the good fortune to obtain a place under some patron. About a fourth of all the places are at the disposal of such; in some cases under the parish, (in the Palatinate in most cases,) and in others under the landed proprietors.

The appointment of teachers, as well as their suspension and dismission, is in the hands of the circle government; and presentations to places must be confirmed by it. Presentations can be made only of teachers who have passed examination; and, for cities, only of those marked I. Appointments to united school and church appointments, must have the consent of the circle government and of the church authorities; but the government is the determining and appointing oocry. An appointment to the ministry must be answered within eight days. The tax on appointments is about 10 per cent. of the income, exclusive of what is paid for assistants. Appointments must be made within the circle. The teacher, when appointed, is "definitive;" that is, he can be removed only on account of special misconduct, or confirmed unfitness. A definite appointment does not remove any liability to public service, and gives no claim to the privileges of public service. The minimum salary is, at present, 250 florins. The scale of October 12th, 1852, is:—

In cities of 1st class, with 2,000 families,	400 fl.
" " " 2nd " with 500—2,000 families,	300 fl.
" " " 3rd " and towns, under 500 families,	250 fl.
In country parishes,	200 fl.
Assistants and coadjutors, (of old teachers,)	150 fl.

An increase of the salaries of from 200 fl. to 250 fl. has been made, which required, in Middle Franconia alone, 8,149 fl. The council of Middle Franconia fixed in 1857 a graduated increase of salaries, based on a number of years of service; which, however, has gone into effect only in single cities, as, for example, Nuremberg. The legal salaries range between 250 and 400 to 500 fl., or, in cities, as far as 600 fl. The numerous patronage appointments hinder any regular advancement. The tax estimate for teachers reaches, in cities, 400 fl., in the country, 300 fl. For those having the smaller salaries, the parishes pay taxes for house and ground, and dominical taxes, (that is, landholder's taxes, as titles, &c.) The school buildings are taxed among real estate, and also permanent additional services, as cantor, organist, sexton. An allowed additional employment is that of parish clerk, reference to which is had in the teachers' seminaries. Teachers also have a portion of land from the parish commons. Thus, the average of income of Bavarian teachers is 325 fl. Although the definitive service as teacher gives in itself no right to a pension, each teacher, when appointed, is obliged to enroll himself in the pension institution for widows and orphans of teachers, which is sustained by contributions of members and assistance from the circle funds. From this, each widow of a teacher receives an annual pension of 40 fl., and in some circles more, and (up to the end of the fifteenth year,) each half-orphan 8 fl., and each orphan 12 fl., annually, as aid in support. The circle of Middle Franconia pays for this purpose a regular sum of 2,000 fl.; as much for the support of disabled teachers, 1,600 fl. for extraordinary aid, 500 fl. for support of poor widows having no claim on the pension institution, 2,144 fl. pensions and payments for support of teachers, their widows and orphans; and in like manner the other circles. The system for pensions of teachers' widows needs revision and improvements; as, although the parishes are bound to make up deficiencies in these pensions, they do it with an ill will and a bad grace. A teachers' orphan-house, where orphans of sufficient capacity may be trained into school-teachers, is much needed. The wretched prospects for their widows prevents many from becoming teachers. *Emeriti* teachers receive a retiring pension from their last place, which is increased from the circle funds. The old and sick are commonly allowed an assistant, and thus occupy their places until death.

Female teachers are scarcely at all employed, except in the Catholic church. Of a total of 313, there are at present only 8 Protestants; there being no call for them in that confession. There are no public institutions for the education of female teachers; and the orders are interesting themselves in them. In the Institution of the English Ladies at Augsburg, twenty-four young women prepared themselves, for the competitive examination in 1855–6. The ministerial ordinance of January 31st, 1836, regulates the private instruction of female teachers, and their examination for employment.

DR. GRASER'S COURSE OF INSTRUCTION

IN THE

COMMON SCHOOLS OF BAYREUTH, IN BAVARIA.

DR. GRASER of Bayreuth, has developed a system of instruction, the principles of which he claims, are founded in the nature and purposes of education, and of man as its recipient. This system has been introduced into the common schools of his native place, and has attracted much attention from a class of teachers in Germany. Dr. Bache gives the following sketch of its general principles, and of its development in one of the common schools of Bayreuth:

After considering the constitution of man, Dr. Graser lays down the principle, that he is destined to live in accordance with it, and in the pursuit of holiness, (godliness, divinität.) The child must be educated in reference to this destination. Man requires strength of body, hence physical education, and of soul, (virtue,) hence moral education. His bodily strength must be rendered available by dexterity, his virtue by prudence. Both must be directed by intelligence, hence intellectual education. Besides, he must have a just sense of the harmony in the relations of life, or a feeling of fitness, or beauty, hence aesthetical education. As a condition of his being, man stands in certain relations to external nature, to his fellow men, and to God. Instruction in nature, man, and God, must, therefore, form the materials of his education. Nature must be viewed in its productions, the objects of natural history, or its phenomena, the objects of natural philosophy, or physics. To complete the study of nature, geography, arithmetic, geometry, and its applications, and drawing, must be called in, and the practical application of the study includes technology and domestic economy. The study of man requires that of the theory of gymnastics, dietetics, history, and geography. To approach to God, man must know him. The first form of godliness is truth. God's truth, then, as revealed, should be man's study. The second form is justice; jurisprudence in higher education, or the laws of the land inpower, should, therefore, also form a part of man's studies, and as accessory subjects, history and grammar. The third is love, taught through morals or practical religion. The fourth is beauty, requiring the study of painting, music, poetry, and decorum. Dr. Graser next endeavors to modify the several subjects of education, according to the special wants of those who are to receive it, which he considers to depend upon their political situation. Thus, for his country, he divides men into three classes, the people, or governed; the nobles; and the reigning family, or governors. The first he considers as more concerned with material objects, the others with the ideal, or spiritual, and hence adopts two divisions of the subjects of study, as calculated for their schools.

In the arrangement of instruction, his principle, that the school must prepare for actual life, is brought into play. He admits no separation into branches of study, no natural order of succession in the branches, but insists that all instruction shall be grouped according to the wants of some particular mode of life. Taking society as the state of man's existence, he begins instruction with the paternal mansion of the child and his family relations, and attaches to these all the elementary knowledge of morals, manners, speech, number, form, objects, drawing, and writing, which would be found necessary in this sphere. He next widens the sphere to include the place of residence, with its community; extends it to the circle or judicial district, to the province, to the country, to the assemblage of the German states, the division of the earth, the entire earth, the universe.

The application of Graser's principles to a common school will be best understood by following up the course of instruction as far as it has been developed in one of the schools of Bayreuth.

The *sixth*, or *lowest class*, is instructed in what relates to family life. The exterior of the house. Its interior. Its inhabitants. Their wants.

The classification followed in Würst's reading book will show, generally, the way in which these subjects are taught.

1. The paternal mansion, considered as the dwelling place of the family. Houses and huts. Stones and lime. (Story of an accident from playing with lime.) The walls and the roof. Doors and windows. (History of the discovery of glass.) Earth, fire, water, and light. Comparison of building materials. Gloom, darkness, light, shadow. Property. Owner. Rectitude. Goodness. Decorum. Politeness. (Story of the polite and the rude boy.) Pilfering. Theft. Robbery. Robbers. 2. The inmates of the house. Enumeration of them. Exterior distinctions between the men and animals. Distinctive qualities of the different domestic animals. The poultry. Further distinctions between men and animals. Voice. Speech as a characteristic of man. Power of induction. Moral order of the family. (The intractable child.) Uses of the domestic animals, obligations toward them. (Tormentors of animals.) Noxious domestic animals. Conduct toward them. Flies. Spiders. Review of conduct toward animals in general. 3. Wants of the inmates of the house. The dwelling itself. Furniture and clothing. Arrangements for their preservation. Inviolability of the property of children and servants. Activity and offices of parents. Duties of children toward their parents.

This course is commenced between six and seven years of age, and occupies about six months. I shall go into some particulars in regard to parts of the instruction. 1. The dwelling-house. The teacher shows a model of a simple dwelling-house, of which the gable end may be removed, and is a rectangular block, surmounted by a triangle. The teacher takes off the triangle, and counts the number of its sides audibly; this part of the house has how many sides? is his question. Three. He shows that it has also three corners, or asks how many corners, leaving to the more intelligent pupils to lead the class in the answer, and when the answer is obtained, causing it to be repeated by all. Watching the class, if he finds inattention, he addresses the question where it prevails, giving the pupils as much as possible to find out, in order to keep up their attention as long as their physical constitution will permit. A change of subject, physical exercise, or rest, should be allowed when the attention is exhausted, the habit of which may be gradually established by training. This inductive course, combined with repetition, is always employed, and in what follows I shall merely indicate the order of the instruction. The figure in question is three-cornered. Interior corners are called angles.* It is a three angled figure, and called a triangle. Next, the four-sided figure is similarly treated. Then the triangular cap is set upon the rectangle, forming a five-sided figure. This part of the model is now placed before the children to draw upon the slate, with the following preliminary instruction. Each group of three or four children, or, if convenient, each child, is furnished with a rectangle of pasteboard, or thin wood, in which five holes are pierced, corresponding to the five angular points of the pentagon to be drawn. These are marked on the slate by inserting the points of the pencil through the holes, and the child is practiced in joining the points by hand. Practice in this constitutes his first drawing lesson. Returning to the rectangular part of the model, the positions of the vertical and horizontal boundary lines are pointed out, and a plummet and common mason's level are shown, to give a notion how these lines are established in practice, and a correct idea of their actual positions. Attention is next called to the horizontal side of the triangular cap, then to the sloping sides. A comparison of the angles which they form with the horizon, and that formed by the horizontal and vertical lines, leads to the distinction between acute and right angles. The objects of a triangular roof, and of the rectangular lower part of the house, are next stated. An obtuse angled polygonal roof is substituted for the one already mentioned. The form gives an illustration of the obtuse angle, placing it upon the model leads to counting as far as seven Dividing the house into stories by lines, to counting to nine. The children are next led to enumerate the parts of the house as shown in the model, and with the names of which they are of course familiar, as the doors, windows, &c. The distinction between squares and rectangles is made obvious. The parallelogram and rhomb are also here introduced. The distinction between curved and straight lines, &c. Different simple drawings of cottages are made. Counting is continued to ten. Addition is commenced by referring to the number of panes in the windows of the model, covering up those not to be added, and proceeding from smaller to larger numbers, within the limits of ten. These are extended to one hundred, stating to the children the mode of formation of compound numbers, to assist their memory. Subtraction is introduced by reference to the same illustrations. Mental arithmetic alone is practiced. In adding numbers which exceed ten, the tens are first added, then the units, carrying to the tens, if necessary; thus, in adding twenty-two and thirty-nine together, their process would be, twenty-two is two tens and two ones; thirty-nine, three tens and nine ones; two tens and three tens are five tens; two ones and nine ones are eleven ones, or one ten and one one; five tens and one ten are six tens, and one, sixty-one. Multiplication is begun also by a reference to the window-panes, which afford, usually, many combinations. Division is similarly treated, the question being such as the children would take an interest in solving, and their coins are early explained to them, and made the subjects of their exercises. Fractions grow naturally from division. The foregoing instruction is interspersed with other matters yet to be described.

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* In German, the space formed by the meeting of two lines viewed from the interior, or from the exterior, has different names, and the compounds of these, with the numerals three, four, five, &c., constitute the names of the figures, as drey-eck, viër-eck, &c.

In fact, there is no fixed order of exercise, or school plan, according to Graser's method, but the teacher is relied upon to advance the different parts of the instruction duly, according to his observation of the progress of the class.

The elements of physics, natural history, technology, and domestic economy, are thus introduced, it being understood that the same mixed method of question and answer, and of direct and inductive teaching, is used throughout. Men did not always live in houses, but once in caves and huts. The inconveniences of such places from cold, damp, &c., are pointed out. The materials required for a house, as stone, mortar, wood, iron, &c. Most of the children have seen the operation of building, and can tell the materials required; those who have not observed, will probably not let an opportunity pass afterward of so doing. Whence the stone is procured, quarries, quarrymen. The hewing of stone. Limestone and lime; the objects being presented to them. The conversion of the limestone into lime. The slaking of lime, making of mortar, its hardening, laying the stones. Digging of the trench for the foundations, &c.

Next the wood is taken for the subject of a lesson. The distinction of wood from fruit-trees and forest trees is shown. Shaping of the wood by sawing. Beams. Planks. Boards. Laths. Trade of house carpenter. Of joiner, &c. In the same way iron is treated of. Bricks and tiles. Glass.

In recapitulating these matters, or in presenting new ones, the elements of grammar are begun. The nouns and adjectives are easily distinguished from the other parts of speech by the induction of the pupils themselves, when directed in the right way.

Used as incidental matters of instruction, but not as forming its ground work.

it appears to me that the foregoing subjects are of value, and that useful hints may be gathered from the way of treating them; hence, I am led to remark upon certain sources of difficulty in their execution. The instruction may be rendered wholly ineffective by the teacher treating the subject in a mechanical way, so that what is intended to excite the observing and reflecting faculties, especially the former, shall become a mere memory of words.' It may be rendered actually mischievous by the teacher inculcating erroneous ideas of natural phenomena and natural history. The teacher's guide should be prepared with care, and revised by adepts in the sciences, to avoid such mischief, which I have known to occur in many cases.*

Elementary ideas of right and wrong, of goodness, of "fitness," ("the beautiful,") are inculcated in the following way: The dwelling being still under discussion, the attention is called to the parts of the door, its lock, &c. The object of the door and its fastenings. Who may rightfully enter a house. The right to put out those entering wrongfully. A story is told here of a poor child begging for admission to a house during a storm, cold, hungry, and ill clothed. The child is received and supplied. The moral is drawn from the children, and benevolence, love to man, is inculcated. In entering a strange house or room, leave must be asked. The contrast of good and bad manners in making or answering the request is brought home to the children. The subject is next followed up by supposing an unlawful entry made into the dwelling, and the difference between theft and burglary, or stealing and robbing, is brought out. The smallest possible theft of any kind, or pilfering, is immoral. A story is told to illustrate the fate of the pilferer.

Next the inmates of the house and out-houses form subjects of instruction, the mode of treating which will easily be conceived by referring again to the general enumeration of the arrangement of the subjects. Exercises of speech and thought, natural history of domestic animals, and much elementary technological information, are thus introduced. Proverbs are committed to memory, inculcating moral lessons or duties.

The next head furnishes an opportunity to examine the wants of the inmates of the house, the topography of the dwelling and its grounds, as introductory to geography, the construction and uses of the furniture in continuation of technology, and to introduce the drawing of simple articles of furniture. Speech is considered as the means of communicating between the members of a family. Other modes of communicating ideas by signs and gestures are adverted to. The sight may be addressed through pictures as substitutes for verbal descriptions addressed to the ear. Hieroglyphics or signs may be substituted for pictures. Trials of these are resorted to, as, for example, the curve of the fore-finger and thumb forming a C, may be imitated on the slate, and understood to stand for "come here." A number of signs, having reference to letters subsequently to be formed, and to their actual use in the spelling of words, are taught to the children, who at first are delighted with these acquisitions, but after a time find the accumulation of signs very troublesome. This is supposed to prepare the way for a zeal in acquiring writing and reading. To connect the written with the spoken language, Dr. Graser goes back to the origin of the former, and imagines that the forms of the letters result, in general, from an attempt to imitate the position of the lips, or lips and tongue, in sounding the component parts of a word. This requires a difficult and in many cases a most fanciful† connection to be formed in the mind of the pupil between the sound and its sign. Four different series of lines are ruled by the pupils upon the slates, on which they write; one is a set of two parallels for the standard letters; another of three parallels for the letters which project above the standard lines, the interval between the upper two being less than that between the lower; another set, also of three parallels, for the letters which extend below, and a fourth for those which extend in both directions. Words are formed as soon as possible, and of a kind intelligible to the child, and sentences of the same character. I doubt much if the pupil receives any real aid from the connection assumed between sounds and signs. The determinate sound of the letters in the German renders the spelling easy, when the true sound and the signs of the letters have been connected in the memory.* The previous practice of drawing has prepared the hand, so that there is a remarkable facility in requiring the manual part of writing. The selection of intelligible sentences carries out the habit of understanding every thing as it is brought forward. Reading the written hand soon becomes familiar, and the transition to the printed letters is easy. In all this instruction the blackboard is used for illustrating the lessons. Elementary principles of grammar are inculcated in connection with the writing and reading.

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* To show that this is not imaginary, I may mention that, in a school where the subject of the caustic nature of lime, and of its heating during slaking, were under examination, they were explained thus: the limestone was turned into lime by heat, in which process it absorbed a great deal of heat, which made it burning, or caustic; when water is thrown upon it, the water unites with the lime, and this heat escapes.

† I have called this fanciful, for so it appears to me, but speak in no spirit of disrespect. This method is connected, in Dr. Graser's school, with the instruction of the deaf and dumb with other children. The maxim prevailing in the principal schools of Germany for the instruction of the deaf and dumb is, that they must be restored to society by enabling them to understand speech and to speak. Hence the first attempt is to make them understand the motions of the organs of speech, and to imitate them, forcing air through them so as to produce the sounds. The perseverance and zeal expended in attempting to carry out this idea are almost incredible. In some of the institutions for deaf mutes much of the instruction is actually communicated through the means of speech.

In the next class, occupying also six months, the instruction is connected with "life in the community." This includes the political organization of the community, with the reasons for it; the geography of the place; the continuation of the exercises of thought and speech; the commencement of Bible history; an extension of instruction in morals, technology, and natural history; of the elements of form; of grammar; of drawing and writing; so at least they would be called in the other schools. The plan of arrangement is as follows:

LIFE IN THE COMMUNITY. History of the formation of communities, with their wants and obligations. Original existence of man. Union of several families. Fatal accidents in communities. Necessity of mutual aid in misfortune. Necessity of a magistracy. Arrangements for safety. Taxes. Laws and punishments. Wants of the community. Roads, bridges, &c. Watchmen. Servants. Council-house. School-house.

2. IN REFERENCE TO MAN. The five senses. Their abuse exposes to punishment. Information in regard to the organs of sense. Their injury or deficiency. Their preservation and exercise. The mind. Perception not required for thought, or for distinguishing the true from the false, the good from the evil. The soul. Man has reason and will. Stories of good actions. The good is not always rewarded in this world, but there is a God.

3 RELATION OF MAN TO GOD. Attributes of the Deity. God is the creator, the supporter, the governor of the world, the father of all men, the high and righteous judge, a spirit. Duties to God. Honor, love as of a child, trust, thankfulness, reverence. Constant remembrance of God. Conscience. Stories related. The evil conscience. Conscience makes a man anxious and uneasy when he does wrong. The moral to be inculcated is, that man has within him a monitor which warns him against doing evil. Story of a pleasant evening. There is also approval within one's self of good deeds. Necessity of a revelation to man. Stories from the Scriptures related. The creation. Cain and Abel. The deluge. Those saved. The prophets. Expectation and coming of the Messiah. The three wise men. The child Jesus. John. Jesus the teacher, saviour, and founder of the kingdom of godliness.

4. RELATION OF MAN TO NATURE. The native place and its environs. The village as the dwelling of the community. The cardinal points. Position of the buildings. Streets. Roads. Springs. Stories of the village. Review of the position of the village. Natural history. Beauties of nature. First walk in the garden. Fruit trees, shrubs, herbs, flowers. The fields, hills, valleys, woods, and forests. Morning ramble in the woods. Morning song. Insects. Stories of cruelty to insects. *Natural philosophy.* Heat. The sun. Sunrise. Song. Division of time. The calendar. Vapor. Storms. Thunder and lightning. Rules for protection.

5. RELATION OF MAN TO SOCIETY. Age and youth. Infirm persons. The able bodied and the sick. Duties toward and protection of the sick. Employments. Laborers and tradesmen. Peacefulness. Willingness in service. Uprighteousness. Respectfulness. Disposition to work. Poverty and riches. Contentment.

The same elements of instruction are, in the next class, grouped about the next political division, the circle, the course occupying, as before, six months. Beginning here, the division restricts some portions of instruction unnecessarily. In general, however, I was satisfied with the progress of this class. I had no opportunity of judging of the results of the following division, namely, "life in the province," no class being in that stage of progress.

In the next following, or "life in the kingdom," the political circumstances became too abstruse for the intellectual development of the children, and the attempts at induction in regard to the government failed almost entirely. All the circumstances, except those relating to the army, were out of the pale of their ordinary experience, and the complex mechanism of government was beyond the power of their reason to grasp. The German language is taught grammatically in this class, and, besides the geography and natural history of Bavaria, its history, the biography of its most distinguished men, arithmetic, mental and written, geometry, drawing, singing, and morals from the Bible. At this stage of progress, it is quite apparent that the branches require a different mode of instruction, that they must be separated, and the progress of each regulated according to the adaptation of the mind of the pupil to its reception, and not according to any extraneous theoretical circumstances.

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* I have a specimen of writing from one of a class who had been five months under this instruction, remarkable for the correctness of spelling and execution. It was written from dictation. The pupil was seven years of age.

The two highest classes being joined under a teacher who pursued altogether the old method of instruction, I had no opportunity to put to the test the judgment formed in the lower class, which I have just expressed. Social or political circumstances do not afford, I am satisfied, a just method of arranging the details of instruction, though a knowledge of them should doubtless form a part of education. The reasons why the arrangement of Graser produces satisfactory results in the lower classes are, first, that elementary instruction does not require a systematic division of its subjects, in order to apply them to cultivating the intellect or morals, or for communicating knowledge: and second, that the subjects are within the pale of the child's experience, and refer to his every day wants and perceptions. Just the reverse, however, is the case in the higher divisions, and hence a different method becomes absolutely necessary.* Still the leading idea of the system, that to develop the intellectual, moral, and physical faculties of man is not sufficient, but that he must be educated in reference to the life in which he is to take a part, strikes with the force of truth, independently of the details which may be devised to carry it into effect.

The institutions which Dr. Graser considers necessary to give the entire public instruction of a nation are:

POPULAR SCHOOLS.	SCHOOLS FOR HIGHER INSTRUCTION.
1. The elementary school.	1. The elementary school.
2. The real school, ("real gymnasium.")	2. The gymnasium.
3. The real institute, ("real university.")	3. The university.

The character of the instruction appropriate to these establishments may, according to his views, be thus expressed. In the elementary school, it should be popular and inductive; in the real school, practical and scientific; and in the university, scientific and practical, or applying science to practice.

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* This view is also taken by Dr. Krüger, whose experience and skill as a teacher I have already so often referred to. See his journey through Germany. (Reise durch Deutschland, &c., pp. 132, 133.)

XII. PUBLIC INSTRUCTION IN BADEN.

HISTORICAL SKETCH.

The territory of Baden contains 5,904 square miles, and its municipal division is into four circles, 74 bailiwicks, and 1,595 communes or parishes, (*Gemeinde*). Of its whole number of inhabitants, which was, in 1852, 1,356,943, about 67 *per cent.* are Catholic, 31 *per cent.* Protestant, and the other 2 *per cent.* Jews, with a very few Mennonites.

The Grand-duchy has existed in its present extent, only since 1806. The territory which has given the name, and the reigning family, to the whole of it, included scarcely a third of the present country. But even this original margraviate of Baden was, from the Reformation down to 1776, divided into two margraviates, totally independent of each other, of which one was Lutheran, and the other Roman Catholic. To these two margraviates, after their union, were added, during the war of the beginning of this century, territories which has belonged to Austria, to the Palatinate, to Fürstenberg, to Löwenstein-Werthheim, or immediately to the empire; and in which either the Lutheran or the Roman Catholic confessions prevailed. Thus the territory of Baden consists of a complex mass of very various portions of territory, having very different histories, ecclesiastical and civil. The school systems were also very different in different parts of the country. In the common schools, the religious instruction was according to the confession; in the Lutheran schools of the ancient margraviate of Baden-Durlach, the smaller Lutheran catechism was used, in a revision which resembled the Brenzi catechism, and contained many extracts from it. In the schools of the Palatinate, which was of the Reformed confession, the Heidelberg catechism was the principal text-book. In the Catholic parts of the country, the various catechisms were used of those dioceses to which each portion belonged. In one district, formerly Austrian, the catechism of the Jesuit Peter Canisius was extensively known and liked by the people; while in another, the Josephine was chiefly used in the public schools.

At the head of the classical schools of the margraviate of Baden-Durlach, was the *Gymnasium Illustre*, which was transferred from Durlach to Carlsbad, and in whose upper class, the pupils of which were called exempts, a portion of the university course was studied.

The Catholic lyceum, whose classes were named according to the chief study in each, pursued in their two higher classes, a sufficiently extended philosophical course. This difference of organization continued to exist long after the various districts were united into one grand duchy. The schools of the two Protestant confessions were consolidated together, in consequence of the union of those confessions, by the decree of the 23d July, 1821. But the schools of the two confessions (Protestant and Catholic) which yet existed, remained each under the control of authorities of their respective beliefs, in charge of the two sections, one for each church of the Ministry of the Interior. Only in Mannheim and Heidelberg, the classical schools of the two confessions were united under the alternate charge of two directors, one of each confession, and under the common authority of both sections of the ministry.

This want of uniformity in the school system drew the attention of the government and of the representatives. From the year 1830, both the chambers interested themselves in the system, and the result was, the laws and ordinances which organized upon a uniform plan the common and classical schools of the whole country, and which with some modifications, of which the most important were made in 1849, are still in force.

We prefix to the account of the school system of Baden, the following brief summary of its extent. The system consists of two universities, a Protestant one at Heidelberg, with students, and a Catholic one at Freiburg, with students. There are also seven lycea, five gymnasia, three pædagogia, four normal schools, nineteen higher schools, and seven Latin schools; and about 2,000 common schools (*Volksschulen*). There are three normal schools; Protestant, at Carlsruhe, and Catholic at Ettlingen and Meersburg. There is an institution for the deaf and dumb at Pforzheim, and one for the blind at Freiburg; a polytechnic school at Carlsruhe, a well organized, large and prosperous institution of very high reputation, with about 200 pupils; a veterinary school, a trade school, and a military academy.

The general classification used below, is under the following heads:—

I. Common Schools.
II. Classical Schools.
III. Real Schools.
IV. Female Education.
V. Orphan and Rescue Institutions, &c.

The plan of this article does not embrace the universities.

I. COMMON SCHOOLS.

All children must attend the common school, beginning with Easter nearest that 23d of April, within a year before which they passed their sixth birthday. For weakly children, this period may be deferred a year. Children attending a higher public or private school, are free from attending the common school, and the district school visitor may also excuse children under a private tutor. This excuse can not be refused, if such private tutor is either an approved candidate for a situation as teacher, or furnishes other sufficient testimony of his competency. The age of obligatory attendance lasts, for boys, through the fourteenth year; *for girls, through* their thirteenth; so that at Easter of each year those are dismissed who have reached the legal age during the year preceding the 23d of April of the same spring. The district school visitor may also, exceptionally and in case of special fitness, and on the recommendation of the school authorities, permit such children to leave the school as attain the legal age after the 23d of April, and before the 1st of August of the current year. Dismission from the school is regulated entirely by the school authorities, without any dependence at all upon the confirmation or first communion of the pupils, which are within the exclusive charge of the church authorities. But the general usage of Christian people brings the two occurrences together, and this custom is materially upheld by the fact, that the supervising authorities of the common schools and the ecclesiastical authorities are usually the same persons.

All those pupils of the common schools who do not attend an industrial school or a higher educational institution, or do not receive such private instruction as is satisfactory to the school authorities, remain after their dismission from the common school, still legally obliged to attend the supplementary schools (*Fortbildungsschulen*). These are in part Sunday-schools, held every Sunday for one hour, except on feast days and during vacation, and to be attended by boys and girls for three years, but in cities only two years; and in part week-day supplementary schools, held in winter once or twice a week for two hours, and to be attended by boys during two years. With each common school is connected an industrial school, in which the girls, beginning with their eleventh year, and if possible earlier, are instructed by special teachers in women's work.

The question, Who must establish and maintain the schools, is answered in great and apparently complicated detail by the law of August 28th, 1835. The parishes or communes (*Gemeinde*), are obliged to bear the burden of the common schools. They must pay the teacher's wages, the expenses of buildings, and the current school expenses, unless special reasons release or diminish the obligation. In making up the amount of the teacher's salary, the school endowment or income of any local fund appropriated to the maintenance of the teacher, is first reckoned, together with any sums paid for the purpose under private agreements, and with the net fixed income of the places of sexton, bell-ringer and organist; but not the accidental fees of these last. Then is added whatever amount the law gives as regular state aid, and then, whatever is still lacking of the legal minimum of the teacher's salary, must be made up by the parish. But this liability, again, is still limited. A maximum rate is fixed by law, of taxes to be laid for the expenditure for this purpose. If in order to raise the teacher's salary to the legal minimum, this tax would be greater than four kreuzers to the hundred florins of taxable capital, or if this expense, together with the other expenditures of the parish, would raise its entire rate of taxation above a certain fixed rate, then the treasury of the state supplies the amount. Building school-houses, fitting up school-rooms, and procuring school requisites, unless other parties are bound to bear the expense by private agreements, or there are funds established for the purpose, are every where the duty of the parish. If several parishes, or hamlets (*Orte*), each with separate means of its own, have a joint school, the amount to be raised by each is apportioned according to the number of inhabitants in each. Besides lodging and a fixed salary, the teacher receives a tuition fee for each child of school age, which is fixed by the circle authorities, between a minimum of forty-eight kreuzers, and a maximum of two florins, or in the four largest cities of the grand-duchy, four florins each. The whole amount of this fee is paid to the teacher quarterly from the parish treasury, and the parish must collect it from the parents of the children, and must itself have whatever is due for children exempted on account of poverty, except so far as it can have recourse to funds for the use of the poor. The supreme school authorities decide on questions of dividing schools belonging to several places jointly, and upon the discontinuances of old and the erection of new schools; and propositions for such measures must be laid before the supreme authorities by the local school authorities, not only through the school supervising officers, but through the administrative state authorities, viz: the district and circle officers. The public schools are in general confessional schools. Where, at the time of the appearance of the school law (1835), there were already existing in one parish schools of both confessions, the parish had to maintain both, and in the cases already mentioned is entitled to the legal state aid. But neither the parish nor the state is under any obligations to assist in the establishment of a school exclusively for those of one confession. In such a case, those of that confession must bear the expenses of their school. In other cases, the children of that confession, which is in the minority, must attend the school of the parish, and their religious instruction may be attended to by those of their own confession. Private schools, however, may always be mixed, as to confession. Their confessional character is derived, not from the confession of their principal or proprietor, but from that of the religious instruction given in them. If clergymen of both confessions give religious instruction in them, they are mixed schools. Jews, where there is no Jewish school, must send their children to the common school; and if there is one of each confession, to either, themselves conducting their religious education. If Jews desire to establish a new Jewish school, since 1835, they must bear the expense. But if a Jewish school existed before 1836, the parish, whenever it raises money for its Christian schools, must raise as much more as is the proportion of Jewish to Christian inhabitants for the Jewish schools. The Jews collectively also receive from the public treasury, an appropriation for their school system, bearing the same relation to that for the common schools, which the number of Jews in Baden does to the number of Christians. There must be a principal teacher in each school. If the number of children exceeds one hundred and thirty, a second teacher must be appointed; and an additional one for each one hundred *and thirty.* The principle is enforced throughout the whole common school system, that not more than seventy pupils at once may be instructed by one teacher.

The immediate supervising officer of the school is the school inspector. This officer is the pastor; or where there are more than one in the parish, then one of them, appointed once in six years by the higher school authorities. His duty is to watch over the strict observance of all ordinances for plans of instruction, the whole general progress of the schools and the official services and the general proceedings of the teachers. He must visit the school as often as its interests require, and as his other official duties will permit. The school committee (*Schulvorstand*) has a close official connection with the school inspector, who is a member and chairman of it. Its other members are, the mayor (*Bürgermeister*) of the parish, whatever his confession; and all the members of the church committee, which the Catholics term *Stiftungsrath*, and the Protestants *Kirchengemeinderath*. If a parish contains more than one pastor, these, being all members of the church committee, are all members also of the school committee. The duty of this body is, to look after a compliance with all laws and ordinances relating to the school system, to superintend the use of the school resources, the purchase of materials, maintenance of buildings, regularity in attendance, adjustment of difficulties of teachers between themselves and with citizens, so far as amicable interposition will effect it; and to make all propositions for improvements. The teachers attend the meetings of the committee, except in cases respecting themselves and their official services; but they have no vote.

Down to the reorganization of the school system, the circle supervising authorities of the schools and teachers were, in the evangelical circles, the ecclesiastical deans; and in the Catholic circles, the secular deans, who were quite separate from those dependent on the archbishops. Since that reorganization, the school circles coincide in boundary with the political circles, which vary, in most of the country, from the boundaries of the deaneries. A circle school visitor for the schools of each confession in each circle is appointed from among the parties, by the supreme school authorities, once in six years. If there are only a few schools of one confession within the limits of a circle, they may be placed under the visiting authority of the nearest circle. Their duty is, to hold the examinations of the schools in their circles in a fixed alternation; to prescribe to the younger teachers exercises for their professional improvement, and to oversee the performance of them; to supervise the reading societies, to conduct the conference, to make announcements relative to school affairs, to nominate to vacant teacherships, and to exercise police supervision over the teachers of their circle.

The highest school authorities for the common schools are, for those of the two Christian confessions, the two High Church-Councils; and for the Jews, the High Council of the Jews. This last is divided into the religious conference and the school-conference, but schools deal only with the latter. This consists of a councilor of the Ministry of the Interior, as commissary, who is chairman; a clerical councilor from each of the Christian High Church-Councils, and a number of prominent Jewish citizens, including the Rabbi of the capital.

These superior school authorities have the superior management of the whole school system, and the police jurisdiction over the circle and local authorities, and the teachers. They admit school candidates, and appoint, transfer, punish, dismiss and pension the teachers. But their authority is still subject to important limitations. All general regulations, especially as to the introduction of new school-books, must be submitted to the Ministry of the Interior. There is also besides these superior school authorities, a High School-Conference. This consists of two clerical members, one from each High Church-Council, and two others, practical educators. This body has charge of the consultation on and drafting of all general school-ordinances, to prepare them to be laid before the Ministry of the Interior, the oversight and conduct of the teachers' seminaries, so far as instruction is concerned, and the authorization and management of the mixed schools. In these matters, they decide absolutely; and in another class of matters, the superior school authorities must take their opinion. This is especially the case when there is a difference of opinion within that body, or any doubt respecting any general question. Such opinion may either be received as ultimate by the superior authorities, or the whole matter may be submitted to the Ministry of the Interior for decision. These latter regulations, which are here given nearly in the words of the laws, show that in all important matters this conference is substantially a higher authority than the superior school authorities; and that means will frequently be found to refer affairs to the Ministry of the Interior. Besides these bodies, the superior authorities, for the industrial schools connected with the common schools, are, the four governments of the four circles of the duchy. Thus, there is no want of superior school authorities.

The relation of the ecclesiastical authorities to the common schools is sufficiently simple, so far as the Protestant schools are concerned, the superior authorities being the same persons for each. These officers decide upon religious school-books, catechisms, singing-books, extracts from the Bible, &c., subject only to the approbation of the general synod. In the Catholic schools, the religious text-books are admitted only on the approbation of the archiepiscopal court; the archiepiscopal deans having the oversight of religious instruction in the schools, and reporting on their examinations, to those courts. There is now in progress, as is well known, a contest respecting the greater influence which the bishops desire to exert upon the common schools; the result of which can not now be foretold.

In 1856, the evangelical common schools were attended by 72,851 children; and the Catholic ones by 131,516; in all 204,367. This number includes all the children of school age, except those who are attending higher institutions. Except the weak-minded and sickly, a child can scarcely grow up in the Grand-duchy, without receiving the legal school instruction, so that there are but very few adult persons in the country who can not read or write. The number of Protestant children in the common schools is about 17 *per cent.* of their population; that of the Catholics about 15 *per cent.* The whole Grand-duchy is divided into 79 districts, partly bailiwicks, and partly smaller districts; in which there are 35 evangelical and 75 Catholic school-visitorships, in all 110. Among these, there are some districts which include but one school parish, as the visitorships of the cities of Carlsruhe and Mannheim. The district having the largest number of parishes is the Catholic visitorship of Bonndorf, containing 35 parishes. Of the parishes, 1,238 are Catholic, with 1,309 schools; and 531 evangelical, with 589 schools; in all 1,769 parishes, with 1,898 schools. There are among the Protestants 814 inhabitants to each parish, and 123 children to a school; among the Catholics, 520 inhabitants to a parish, and only 100 children to a school. The common schools are either simple, or with an extended course; the latter being only to be found in the larger towns. In the evangelical schools there are 752 teachers; 582 principals, and 170 assistants; in the Catholic, 1,699 teachers, 1,338 principals, and 361 assistants. There are thus among the Protestants 90 children to a teacher; among the Catholics 77 to a teacher. The Jews have 28 schools, with 30 teachers; to a population of 23,700. In the evangelical schools there are no female teachers whatever; while in the Catholic city schools there are here and there female teachers for girls. In some towns the girls' schools are under the charge of the sisters of the female orders.

The state appropriates 7,742 florins to the evangelical schools, and the parishes pay for them, 59,377 florins. The tuition fee amounts to 74,288 florins. The regular salaries of all the teachers amount to 404,675 florins, and the total tuition fee, at an average of 50 kreuzers *per* child, reaches 170,310 florins.

We give below a condensed summary of the existing Laws and Regulations respecting the Common Schools in the Grand Duchy of Baden.

SUMMARY OF LAWS AND REGULATIONS RESPECTING COMMON OR PRIMARY SCHOOLS.

SCHOOL AUTHORITIES AND INSPECTION.—These institutions are all under the general supervision of the State, from which they receive in some form aid annually. Their supervision is committed to the Department of the Interior, subordinate to which there exists an Education Department or Council, consisting of one member for each of the four districts or circles, into which the State is divided. In all regulations respecting religious instruction, the highest authorities of the Protestant and Catholic churches are consulted.

For the primary schools, there is a School Board, or committee for each of the four districts, which must be consulted by the local school authorities in the founding of a new school, or suppression of an old one, and respecting all changes in the appointment of teachers. The board has the appointment of a School Visitor for all the schools of the district, who holds his office six years, and is paid out of the State appropriation for educational purposes, and a School Inspector for the school or schools in each town and rural parish.

The lowest school authority consists of the Inspector as chairman, the mayor, or highest civil officer of the locality, the vestry of the parish among Protestants, the trustees of all ecclesiastical foundations in Catholic communities, and the directors of synagogues in Jewish communities. These constitute a local or parochial school committee. In large towns, on special application, the State Education Department can appoint a special board to take charge of all the schools, and of any separate school for a particular religious denomination.

School Attendance.—Children whose sixth year terminates between the 23d of April of one year and the 23d of April of the year following, are bound to commence their schooling with Easter of the second year. A year is allowed where infirmity or similar disabling causes are proved to the satisfaction of the school authorities.

The parish clergy, who keep the registers, have to furnish the school authorities with a list of all children whose schooling begins at the next following Easter. To this a list is added of all children not born in the place, and which has to be drawn up by the school authorities. These lists are to be handed to the schoolmasters; and one fortnight after the school is opened, the schoolmaster has to return to the authorities the names of such children as attend the school, as well as those of the absent children. The latter are to be forced through the police to attend school, except where their absence is excused or explained for reasons hereafter to be stated.

Children leave schools also at Easter. Boys on having completed their 14th year, and girls their 13th year, or expecting to complete it before 25th April of that year. If by that period children who have attained these ages are not sufficiently advanced in the objects of instruction specified, they may be kept one or two years longer. Every scholar obtains a certificate on his leaving school.

Children who have private instruction, or who attend higher institutions, for the purpose of obtaining better instruction, are free of the school, but require a certificate from the school inspectors. Private seminaries must be authorized by the upper school authorities. This authorization cannot be refused where the applicants are in every respect approved candidates as masters; but such establishments must make good the school money which they abstract from the regular schoolmaster.

Every week the schoolmaster is required to give to the school authorities a list of such children as have been absent without leave, or who, having absented themselves, did not satisfactorily account for their so doing, together with number of days' absence. This list is handed to the burgomaster, who forwards it to the parents of the children, and imposes a fine, varying from 2 kreutzers (⅔*d.*) to 12 kreutzers (8*d.*) for every day of non-attendance.

Studies in Primary Schools.—The studies in the elementary schools are—1. Religion. 2. German language. 3. Writing. 4. Arithmetic. 5. Singing. 6. General instruction on subjects of natural history, natural philosophy, geography, and geometry; also on points appertaining to health and to farming. 7. Where there are sufficient means, drawing is to be taught. The last-named subjects are to be treated in such a manner that the more essential first five points are not to suffer by the attention bestowed upon them.

Internal Organization of Primary Schools.—1. Schools that have but one teacher are to be divided into three classes, to be counted from the lowest as *first* upward.

In the summer half-year the third or highest class has two morning hours of schooling daily; the second class has also two morning hours, and the first or lowest class has two hours in the afternoon.

In the winter half-year the third or highest class has three morning hours of instruction daily. The second class the first afternoon hour alone, and the second in conjunction with the first class or beginners. One of these classes is to be employed in writing, under the inspection of a proper monitor selected from the scholars, while the other class is taught by the teacher. On half-holidays (Wednesday and Saturday) the morning hours, three in summer and four in winter, are to be proportionally divided among the three classes.

2. When there are two teachers, the elder scholars are to be placed under one teacher and the younger half under the other. The school is then divided into four classes, each teacher taking two, and each class has instruction for three hours daily, both in summer and in winter, excepting on half-holidays, when each class has but one hour and a half in the morning.

If the number of pupils does not exceed 210, they may be divided into three classes, with the consent of the school authorities. If boys and girls are instructed simultaneously, the division indicated above, into higher and lower classes, each under a separate teacher.

Where there are three teachers, one is to instruct the beginners in the two first classes. Where the upper classes are composed both of boys and girls, the elder pupils are under one teacher and the younger ones under the other, or the sexes may be separated.

With four teachers, two distinct schools are formed, of four classes each, the arrangements being such as are already indicated.

These arrangements, being fixed by the Education Department, in conference with the parochial school authorities and the Inspector, may be modified to suit the exigencies and the means of larger towns or villages, provided that nothing be so arranged as to interfere with the rules that no class is to exceed 70 in number; that each class is to have three hours' instruction daily, and the upper boys' class to have four in winter, with the exception of half-holidays, when the instruction is to be for them two hours, and for the others half hours.

In places where industrial schools for girls are established, no change in these arrangements is to be made in consequence. Changes made, in consequence of the aid of an assistant being required from the ill health of the master, or an increase in the number of children, are to be reported to the Inspector, who will report upon them when submitting the results of his inspection to the Education Department.

3. The advance of children from one class to another takes place after the examination, with the approval of the Inspector, and with due regard to the age and natural powers of the pupils. When the parents do not consent, a child can only be required to continue at school beyond the legal age on an authorization of the Education Department through the Inspector.

4. Care is to be taken that the pupils assemble punctually at the fixed hours, and they are clean in person and attire. They must also behave with propriety both on their way to and from school and while at school. The injunctions concerning their conduct are to be publicly read to the pupils at the beginning of every half-year, and are to be hung up in every school-room.

The pupils can be placed in their respective classes, according to their conduct and diligence, every week or month; but in the first classes oftener, if the teacher thinks it advisable.

Permission to absent themselves from a single lesson may be granted by the teachers; for more than one, the permission must be obtained from the school Inspector.

Punishments consist in reprimands, in giving a lower place in the class, in tasks after school hours, and, where obstinate persistence in faults is observed, in blows with a cane on the hand in a manner that is not dangerous. The teacher only takes cognizance of faults committed in school, or on the way to and from school. Bad conduct at other times is only punished at school when the parents and guardians palpably neglect their duty.

5. The school-rooms should have ten feet in hight, and be built on a scale of six square feet to a pupil.

PLAN OF INSTRUCTION.—The aim of the primary school is to cultivate the intellect of the child, and to form his understanding and religious principles, as well as to furnish him with the knowledge requisite for his station in life. Instruction must, therefore, be imparted in such a manner as shall improve the mind.

The pupil must have his attention sharpened, and his intellectual energies must be brought into activity. He must learn nothing mechanically. The memory must not be cultivated, except in connection with the understanding and the feelings. The formation of every idea is to be preceded by the requisite insight into its fundamental principle, whether exemplified by objects or figuratively. In all explanations the elementary principles must precede the complex views. What has been learnt must be made familiar by frequent application and illustration. The instruction given in the different classes must correspond with the plan here laid down.

Religious Instruction.—Care must be taken that the lesson in religion does not degenerate into a mechanical learning of sayings and of chapters from the Bible. The pupil's insight into all points must be clear and well grounded; his feelings must be roused, and his good propensities must be confirmed.

The nature of the instruction given in religion is to be regulated in detail by the highest authority in the various confessions; it is to be communicated through the catechism and school books approved by these authorities and sanctioned by the State. In this lesson the duties of the citizen are to be enforced.

The school is to open and close daily with a short prayer or hymn, and the children are to be kept to regular attendance at church, the subject of the last sermon being a matter for the catechist to examine them upon.

Grammatical Instruction.—Grammatical instruction must be connected with exercises in correct thinking, as well as in the fittest mode of giving expression to thoughts. The consideration of the correctness of an idea must precede that of the mode of expressing it.

The organs of speech must be exercised until completely formed, and a due modulation of the voice must be cultivated. The writing lesson must teach neatness and a love of form.

Arithmetical Instruction.—Comprises the four rules, preceded by proper explanation of the properties and nature of figures, and simultaneously exercised, mentally and in writing. The mental calculation is to precede the written sum on all occasions. After practicing the rules in whole numbers, fractions, and with given simple or compound quantities in examples applicable in common life.

In the second class the construction of simple geometrical figures is to be taught both to boys and girls. In the highest class the use of the square and compass, and the mode of reducing to proportionate dimensions, is to be taught.

Musical Instruction.—The classes range as follows:—

First class.—Exercises of the ear and the voice. Simple solo airs.
Second class.—Duets and easy chorus singing.
Third class.—Chorus and ornamental singing.

General Instruction.—In natural history and philosophy, geography, history, sanitary points, and agriculture, will be imparted by the pieces selected in the reading-books, and can be enforced and illustrated by additional examples and reasoning on the part of the teacher.

Division of Time.—Half an hour daily must be devoted to religious instruction, but this time may be prolonged or abridged, according to the subject-matter treated of.

The study of the mother-tongue, combined with reading and writing, is to occupy a portion of six days in the week, in addition to copies to be written out of school hours. Arithmetic is to be taken four times, and singing twice in the week. Instruction in matters of general interest is to be given to the second class once and to the highest class three times in the week.

The plan of the school is to be arranged between the teachers and the Inspector for every half-year, and a draft of it must be laid before the school authorities once a year, together with the results of the inspection. When the children appear behindhand in particular points of instruction, more time must be appropriated to those in the following year.

If the scholars of one school be of different religious confessions, care is to be taken that they receive their religious instruction at the same hour. If the school belong exclusively to one confession, but is also attended by children of another confession, the instruction in religion must be fixed in the last hour of attendance, that such as do not participate in it may go home, or wherever such instruction may be provided for them.

Beside the primary schools, the following classes are established by law as part of the educational system of this Duchy, and are provided for in the primary school-houses.

Evening Classes.—Twice a week, during the winter, in every village and town, an evening class must be opened under the proper school authority, when young persons who have completed their fourteenth year, and have left the primary school, may continue their studies.

Sunday Classes.—All young people who have completed the primary school course, are obliged to attend, in the towns for two years and in the villages for three years, a class every Sunday morning, not only for religious, but for secular instruction.

Industrial Classes.—As a general rule, men are employed both as principal and assistants in the primary schools, and boys and girls of the same age and proficiency are taught in the same class-rooms. To enable the girls to acquire the arts of sewing, knitting, &c., the school committee are obliged to engage some suitable person to attend every school in which a female assistant is not employed, for an hour at least every afternoon after the boys are dismissed, to instruct the girls from the completion of their eleventh year in the mysteries of stitching, hemming, darning, shirt making, knitting, &c. If their mothers wish it, the girls bring their sewing from home with them for this practice, but if they do not bring any material, the committee must provide it. No fee is charged for this industrial training. The inspectors are required to report on the state and progress of these as well as the other classes of the schools.

Factory Schools.—No child may be employed in any manual occupation, until it has completed its ELEVENTH year; nor may any child, even at the completion of its eleventh year, be employed in a factory, or in an industrial occupation, unless it then attends the so called "*Factory Schools.*"

The laws prescribe, that in these schools—

No greater number of children than seventy may ever be educated together at the same time.

The secular education given in them, must correspond to that prescribed by law, for the primary schools in general.

No person may be selected, as a teacher of one of these schools, who has not obtained a diploma from the committee of public examiners for the Duchy.

Each child attending a factory must receive, at least, two hours' instruction in the factory school.

The hours of instruction should precede the morning and afternoon's working hours; but where this is impossible, an hour's relaxation must intervene between the hours of labor and the commencement of the hours of study.

In the middle of the above-mentioned morning and afternoon working hours, the children must be allowed to take a quarter of an hour's exercise outside the mill, and in the middle of the day, there must be an interval of a full hour between the morning and the afternoon working hours.

Young people under the age of fifteen, are not to be employed more than twelve hours a day in the factory and factory school together.

Such young people are not to be employed in labor before five o'clock in the morning, nor after five in the evening, nor on Sundays or holidays.

All masters of factories, who employ young people under the age of fifteen, must render periodical lists of the children employed by them; giving the names, ages, places of residence, and names of the parents of such children.

Any infringement of any of the above regulations will render the manufacturer offending liable to fines, the amount of which is fixed by law.

The county magistrates are charged with the strenuous enforcement of these regulations.

All the expenses of the education of the children attending a factory before the completion of their fourteenth year, must be borne by the owner of the factory which they attend.

TEACHERS' CONFERENCES.—In each union (district or circle) the union inspector is obliged, every September, *i. e.*, during the holidays, to send notices to every teacher in his district, to assemble at a place and time specified in the notice.

Every teacher, who receives the notice, is required by law to assemble at the place and time therein mentioned.

Notices are sent also to each of the religious ministers of the union, that those, who are able, may meet the teachers. The educational magistrate of the county, or some one representing him, is also always at the meeting.

The notices are sent round as early as the month of May, preceding the meeting. The inspector, when he issues them, sends at the same time to each teacher in his district, one or two questions on some point, connected either with the practice, or the methods of teaching, or with some of the various subjects of instruction, and upon which there has been some difference of opinion or practice.

Each teacher is required to send to the inspector an answer to these questions by the month of August.

When the inspector has received these answers, he reads them carefully through, and writes a short and concise criticism of each answer, and reads it to the teachers when assembled at the conference.

After the inspector has read the answers and criticisms to the meeting, the teachers proceed to debate the subject among themselves, rising one after another, and addressing the meeting upon it by turn.

When this debate is concluded, three teachers, who had been chosen by the previous meeting, are then called upon to instruct a class of children before the rest of the assembly, in different branches of instruction. Their performances are then criticised and discussed by the others, who had been looking on as spectators.

This plan serves two important ends:

1st. It stimulates each of the teachers to aim at continual self-improvement, in order that he may excel his competitors at the yearly meetings, and prove himself worthy of recommendation by the inspector to the more lucrative situations as they fall vacant, and also that he may win the respect and approval of his professional brethren.

2d. It obliges the teachers to *think* over the various methods of instruction; to consider how they may teach in the most effective manner; to avoid bad and slothful habits with their scholars, and to observe how best to catch and retain the attention of their scholars, and how most effectually to interest them in the subjects of instruction.

At these meetings, also, the teachers arrange the affairs of their book clubs. Every teacher in each union is a member of the teachers' union book club. They each pay a small sum monthly, and with the sum thus collected, a few books are purchased and sent round from one to another. At the September meetings, they choose the treasurer of their book club, and determine what books are to be purchased.

Before the meeting is dissolved, a short account of all the proceedings is drawn up; and is then signed by the inspector, the magistrate present at the meeting, and all the teachers, and forwarded to the chief magistrate of the county, in which the union is situated.

The expenses of each teacher, incurred by attending these yearly conferences, are defrayed by the state.

SCHOOL DIARIES.—These must be kept officially by the school inspector and by the pastor. The school inspector enters in his, each of his visits, the condition in which he finds the schools, any remarks, and any of its arrangements deserving mention. These diaries are quite usually kept, and laid before the visitors' board in the original. Teachers are not obliged to keep any diary further than a list of delinquencies.

SALARIES AND CONDITION OF TEACHERS.—There is a fixed minimum salary, at four grades, according to the size of the place where the appointment is held. These are, 175 florins for villages less than 500 souls; 200 florins for those of from 500 to 150 souls; 250 florins for country parishes of from 1,500 to 3,000 souls; 350 florins for city parishes of over 3000 souls. In a school with three principal teachers, the first has a special allowance of 40 florins; if there are four or more, the first has such an allowance of 60 florins, and the second one of 40 florins. Every principal has also his lodging; but if there are more than one principal in a school, only the first has this lodging, the others having an allowance for it, varying according to size of places from 40 to 100 florins. Besides this, the teachers receive the amount of the tuition fee; which, for example, in the evangelical common school of Heidelberg, amounts to 2,100 florins a year, to be divided among six principals and two under-teachers. Each under-teacher receives 45 florins a year, together with free lodging, board, washing, light and fuel, with a principal, under whose oversight he is. These items may amount, in the first and second classes above mentioned, to 90 florins, in the third to 105 florins, in the fourth to 115 florins, and in the four largest cities, Carlsruhe, Mannheim, Freiburg and Heidelberg, to 150 florins.

The teachers are not permitted to fill additional offices without permission of the superior school authorities. They are often church actuaries; it is very difficult to obtain permission to become secretaries of the municipal councils; but necessity is stronger than the wishes of the authorities, and in the country this office is often held by teachers. They are here and there also excise officers. Teachers, like public officers and pastors, have civic rights in the place of their appointment. They are free from personal taxes, and pay parish taxes only on their income over 400 florins. They however pay the class-tax to the state, on their whole income. If they become past service, they are dismissed with a retiring pension. After 40 years' service, this is the whole amount of the salary, together with free lodging. After from five to ten years' service, it is 40 *per cent.* of the salary; and from the 11th to the 40th, 2 *per cent.* more for each year.

FEMALE TEACHERS.—In the evangelical schools there are none. In the catholic schools in the cities, there are some; who are either secular, as at Heidelberg, or sisters of orders, as in Freiburg, Offenburg, Villingen and Breisach. In these last, there are no other female schools; and they fill the place not only of the common schools, but of the higher schools or institutes for girls. Some of them have a boarding department. Some of these are in high repute, as at Freiburg.

where, although there is a large protestant congregation, there is no protestant girls' school, but they are all sent to the sisters' school. These institutions cost the parishes and the state almost nothing, and afford their excellent instruction at a fabulously low price.

Discipline.—In cases where the coöperation of the pastor and mayor, &c., is necessary for the imposition of fines on parents for their children's non-attendance, there are very general complaints of neglect. The mayors, for fear of losing popularity, are averse to do any thing disagreeable to the parents; and the inspectors are as pastors connected in too many ways with the mayors, to be disposed to be prompt in complaining to them. From many families fines can not be collected, and if imprisonment is substituted, the expense and maintenance must be paid from the public treasury; and moreover, there are many who will willingly go to prison for a day, for the sake of the day's meals.

The school discipline extends only to the period passed in school and in coming to and going from it. In other cases, school punishment can only be inflicted after proof of neglect by parents or guardians. Rules for deportment are read at the beginning of each school year, and hung up in the school-room. The punishments are reproof, sitting or standing in some particular place, detention in school under oversight and at work, and, in exceptional cases, moderate correction with the hand or the rod. This is the provision of the ordinance. In practice, it has very frequently been found absolutely necessary to use confinement and bodily punishment in a somewhat more severe and extended manner. The school law says nothing of rewards; and they are not given, except where there are especial funds for the purpose.

Supply of Teachers.—The number of candidates offering is insufficient. They are mostly from the families of teachers, and from those of the lower class of citizens and the poorer class of farmers.

General Defects.—The chief objection brought against the operation of the common school system in Baden, is, the fluctuation of its legislation between the tendencies toward a church and a state organization. It is undoubtedly true, that there is a certain ambiguity in this particular; and it depends upon the individual tendency of the person judging, in which direction he would determine it toward an entire consistency. The existing controversy as to the influence of the Catholic church, is perhaps the necessary means of escaping from this controversy; but in which direction it is impossible to say.

Another complaint is of the great number of school authorities: a point which has already been earnestly discussed in the Chambers, but without the suggestion of any remedy. Many complaints are also made of the excessive and empty formalism of the method in teaching language, and the excessive amount of writing necessary in the oversight and conduct of the schools. This last is, however, connected with so many established arrangements, that it is hard to say how it can be remedied.

In the budget laid before the assemblies of 1856 and 1857, title IX, Instruction, of the Budget of the Ministry of the Interior, calls for an appropriation, for the year, of 354,114 florins. Of this, is intended for the common school system, 95,546 florins, 43 kreuzers; from which deduct 17,000 florins for the higher burgher schools, leaving 78,546 florins, 43 kreuzers. Under title VII, "District courts and police," is asked, § 36, as appropriation to the salary of common school teachers, 36,000 florins a year. Thus the total amount asked for the common school system, reaches 114,546 florins 43 kreuzers a year. Other items in the budget are, Catholic school-teachers' seminaries, 16,463 florins; evangelical, do., 8,173 florins; Catholic teachers' conferences, 1,500 florins. (There is no item in this budget for evangelical teachers' conferences; but on the other hand, there was none for the Catholic ones in 1852 and 1853, but for the same two years, 2,655 florins 5 kreuzers for the evangelical ones). For clerks, &c., in district school visiting, 1,296 florins; visiting common schools, 2,000 florins; aids to single schools, 2,638 florins 43 kreuzers; appropriations to increase individual salaries, 6,000 florins; pension and assistance fund for teachers, 28,000 florins; for widows' and orphans' fund, 10,000 florins; for Jewish teachers, 976 florins; to create a fund for poor teachers' widows and orphans, 1,500 florins. An additional budget raises the state appropriation to increase individual salaries to 10,000 florins; for pension and assistance fund, to 30,000 florins; for Jewish teachers, to 1,190 florins.

XIV. PUBLIC INSTRUCTION IN DUCHY OF NASSAU.

THE DUCHY OF NASSAU embraces an era of 1751 square miles, and a population, in 1853, of 429,341. The state of education is highly creditable to the government, and the people.

I. ELEMENTARY SCHOOLS

The present organization of Elementary schools was introduced in 1817.

The school age embraces the period from six to fourteen years. Every child between these ages, must be under instruction at home, or in some school, public or private. Parents who do not instruct their children at home, or send them to school, are subject to a fine, which is increased on each repetition of the offence.

The time of daily attendance is from 7 to 10 A. M., and 1 to 4 P. M., in summer, and from 8 to 11 A. M., and 1 to 4 P. M., in the winter, except on Wednesdays and Saturdays, which are kept as half holidays.

The course of instruction embraces religion, reading, singing, writing, arithmetic, geography, and the elements of natural history, music, geometry, and in a few schools, of agriculture and manufactures. Girls are taught appropriate needle work on Wednesday and Saturday afternoons.

The school-house is built by the parish, and furnished with blackboard, large tables of figures, and other means of visible illustration, and is generally provided, not only with a play-ground, but with rooms and a garden, and orchard for the the teacher.

Teachers must be trained for three years in one of the two Normal Seminaries established by the government for this purpose,—one for Protestants at Usinglen, and the other for Roman Catholics at Montabauer;—each calculated to accommodate about sixty pupils. At the expiration of three years, they have to pass an examination, after which they are appointed school assistants, with a salary of about $60 which is increased at the end of each successive two years, until they are appointed head master, with a salary of about $300, with the perquisite of a home, garden, and not unfrequently of organist of the parish church, and of leader of singing societies. When a teacher becomes unfit for service by sickness, or old age, he is entitled to a pension of at least one half of his former average salary; and at his death, his widow and children are provided for out of a special fund. Small as the salary is, the teacher in Germany prefers the certainty of even a small salary, paid at regular intervals, with the provision for old age, and his family after his death, to a much larger salary, in a private school. His social and political position is higher; he ranks with the officials of the state. Females are seldom or never employed for teachers, even as assistants, except in the instruction of girls in domestic economy.

The differences in religious opinion and worship is provided for, both in the instruction and supervision of the schools. The population is divided up among Lutheran and Calvanistic Protestants, Roman Catholic, and a few Jews. In purely Protestant parishes, Protestant teachers are employed, and in Catholic districts, Catholic teachers. Where the population is mixed, and the school has two or more teachers, the teachers are selected from the several denominations. If there is but one teacher, the teacher is of the religion of the majority. "Experience has shown," says a well informed school inspector, "that when there is a conscientious endeavor to act with impartiality and justice, that there is no insurmountable difficulty in reconciling the religious prejudices of any class to the public school."

The supervision of the schools is left (1.) to a local committee, consisting of two Protestants and one Catholic, when the former predominate, and two Catholics and one Protestant, when there is a Catholic majority of inhabitants; and (2.) to school inspectors, [some seventy in all] appointed by the government, each having charge of all the schools in a certain number of parishes.

The local committee see to the repairs of the school-house, conduct of the master, and his methods of teaching, and ascertain by the monthly list prepared by the teacher, the school attendance of the children, who are esteemed as being of the proper school age, and report to the proper authority those parents who are negligent in this particular, for the payment of the fines.

The district inspectors, who are generally clergymen, selected from different denominations, for their interest in education, conduct the examination of the teachers for promotion, hold a public examination of the school in the spring, and a conference of the teachers once a year, and require a written account, or return of each school annually from the teacher.

The support of the schools is thrown (1.) upon parents, who pay into the treasury of the parish from 50 cents to $2 a year for each child; (2.) on the parishes which are required to appropriate something every year to the school-house, appurtenances, and the wages of the teacher; and (3.) on the government which pays the expense of inspection, and aids the poor families by special grants.

II. Secondary Education.

Secondary instruction is provided in a series of schools called the Pedagogium, and the Gymnasium.

The Pedagogium affords instruction of a higher grade, comprising lessons in Latin, Greek, French and German, mathematics, with the application thereof to ordinary life, natural history, natural philosophy, technology, geography, history, religion, writing, drawing, singing, and gymnastics. The regular period of attendance on the Pedagogium is four years, or from ten till fourteen years of age. The classes are four, and the rise from one class to another takes place alone after a general public examination, which is held before one or more commissioners of the government, and lasts two or three days.

Besides assistant masters of different sorts, each class has its head master, and the whole establishment is governed by a rector, who is entrusted with a considerable degree of power over both masters and scholars, and who is the organ through which the will of the government concerning the school in which he presides, is communicated to all persons interested. Through his intervention, also, the wishes and opinions of those under him are laid before the higher authorities. The masters are required to hold conferences among themselves concerning the state of the school, &c., at least once a month; and on these occasions the rector presides, but the plurality of voices decides any question at issue in the conference. In the person of the rector, the duties of teacher are combined with those of administrator; but nevertheless so much of his time is not devoted to the former functions as is absolutely required from the other masters.

The Gymnasium receives scholars from the highest class of the Pedagogium and carries them farther in ancient and modern languages; a course of Hebrew is added for the theological students. Ancient geography, Greek, Roman, German antiquities, and universal grammar, also receive attention. The outlines of Astronomy, together with various branches of philosophical study, (which in Germany is subjected to infinite subdivision,) are here taught; and all the objects of instruction begun in the Pedagogium, are pursued as far as the knowledge and abilities of the masters and scholars will permit. Drawing, dancing, music, riding, gymnastics, swimming, &c., are here, however, objects of private study left to the option of the students.

Besides these general establishments, there exists a number of institutions for particular kinds of education, the most important of which is the Normal school or school for future masters of elementary schools before described.

III. Superior Education.

By an agreement with the government of Hanover, the University of Gottengen is open, with special privileges, to the students of Nassau, except in Roman Catholic Theology, for which candidates resort to Marburg, in Hesse Cassel.

IV. Industrial, or Technical Training.

The government has not undertaken to provide directly for industrial education, but makes money grants in aid of the operations of a Society, [called Gewerbe-Verein,] devoted to the promotion of the manufacturing and commercial interests of the Duchy. The following notice of its action in this particular is taken from Twining's "*Letters on the Condition of the working classes of Nassau.*"

One of the most important steps of this Society, has been the establishing in various parts of the Duchy, of what are called *Gewerbe-schulen*, or industrial schools. consisting of—

Firstly, Evening classes, (*Apend-schulen*,) held in winter time for the purpose of giving young Artizans and others an useful complement to their elementary education, in such branches as commercial reckoning and correspondence, and practical geometry.

Secondly, Sunday Classes, (*Sontag-schulen*,) intended for departments of study which are not so well taught in the evening as by daylight, and held on Sundays for the benefit of young men, chiefly apprentices, whose occupations would not allow them to attend conveniently during the week. They comprise the various branches of drawing required for the industrial trades, and geometry applied to the arts of design.

According to the annual Report, read at the General Meeting of the *Gewerbe-Verein*, on the 11th of May, 1853, by the able Secretary, Dr. Casselmann, the number of Industrial Schools in activity in various parts of the Duchy, is at present twenty-five, with an aggregate number of about two thousand students.

A Modeling School has also been established at Weisbaden, and is attended at present by between thirty-five and forty students.

The Report gives 7419 florins, or about 618*l.* sterling, as the amount expended in the last financial year, for founding and maintaining the above schools, whereof about two thousand florins were furnished by the Society, and four thousand florins were covered by a government grant; the remainder was supplied by the localities.

To secure a proper degree of intelligence and practical skill in all who pursue any trade, there is a legalized system of apprenticeship, which Mr. Twining thus describes.

The would-be Artizan must be able to exhibit proof of having concluded his attendance at school, (which as I have mentioned elsewhere, is obligatory from the sixth to the fourteenth year.) by satisfactorily passing his final examination; he must also have passed his confirmation, which takes place about the same time; it is preceded for a considerable period, by strict religious instruction, and is solemnized by both Protestants and Catholics in a very impressive manner.

If a lad is quite a dunce, and especially if he can not satisfactorily get through his Catechism, he may be retained under tuition another year; or if his vicious propensities are found incorrigible by ordinary means, he may be sent off to a disciplinarian school, called *Rettungs-haus*. One of these establishments was founded in 1851, near the little town of Nassau, by the Countess von Giech, and now contains about ten boys; another has just been erected near Weisbaden by a pious Evangelical Society.

If all is tolerably right, the lad receives in due form his educational certificate, and he and his friends set about looking out for the right sort of shop, and a comfortable master; but before a definite agreement is come to, German prudence steps in very appropriately, and prescribes two weeks' preliminary trial. If this turns out to mutual satisfaction, a contract is drawn up, of which the legalization is obtained with very little expense, or none at all, if the parties are poor.

For ordinary trades, such as those of the shoemaker, tailor, joiner, baker, &c., the usual term is three years, and the total sum to be paid to the master varies from thirty to sixty florins, ($12 to $20;) or a term of four years is agreed upon, without payment, the work of the apprentice in the last year being expected to form an equivalent.

With respect to more difficult trades, such as those of the watchmaker, mechanician, lithographer, &c., the term is usually three or four years, with a payment of eighty to two hundred florins, ($33 to $40.) Some few trades, requiring little or no technical training, are exceptional with regard to payments; thus apprentices engaged in the operations of building, whitewashing, &c., not only have nothing to pay, but receive at once a daily remuneration of a few *kreuzers*.

In no case does an apprenticeship last longer than four years; serious disagree ments between masters and apprentices are in some measure obviated by the examination which must be undergone before an artizan can settle anywhere as master; but in all cases redress is facilitated by the practice of paying the stipulated sum by installments, so that one-third or one-half the amount stands over to the conclusion of the term. If an apprentice has just cause for complaint, he is released by the local authorities from further obligations towards his master, and his friends from further payment.

At the expiration of his term, the apprentice must furnish proof of the extent of his acquirements, by executing some appropriate piece of handiwork, in the presence of the official judges of the trade, forming a kind of jury, which, from its usefulness, deserves some attention.

Every three years the masters in each trade residing in a district, or in a group of districts if the trade is a scarce one, assemble to elect, or re-elect, three representatives for the purpose of examining the certificates, and of testing and recording the abilities of industrial candidates.

If the examiners are not satisfied with the young man's performance, he must find means of improving himself, within half-a-year, against another trial; if, on the contrary, they are well pleased, he obtains his certificate as *Gesell*, or journeyman, and sets out for his travels.

When the *Gesell* arrives at a town, he goes forthwith to the *Herberge*, or specially appointed inn of his trade, where the *Herberge Vater*, (inn father,) from whom he is entitled to receive paternal attentions and advice, shows him a register, in the form of a slate, or blackboard, on which is inscribed the name of any master wanting a hand. If the register is a blank, and the *Gesell* has no cash in purse from previous savings, he may claim his *Viaticum*, or traveling money, which is either paid from the treasury of the town, or from a subscription purse of the trade, or made up by small donations which he gets at the several workshops of his calling, where he applies in succession for that purpose; in so doing, he generally makes good his claim to brotherly assistance by some token which he bears, or by mysteriously symbolicalical signs and passwords, analogous to those used in freemasonry.

At Frankfort, where trade affairs are reckoned to be on a more liberal, or more antiquated footing than elsewhere, an itinerant servant of the proud company of hair-cutters receives from a special purse as much as thirty-six kreuzers, (one shilling;) but this may be accounted exceptional, and in the generality of cases, the total amount which a common journeyman obtains by legitimate means, is no more than a few pence. At all events, the sum is definitive; except in case of illness, no further sum can be claimed, and it will be well if the next morning's dawn sees our wanderer trudging contentedly onward, his knapsack on his back, with a boot sticking out at each end of it, and his faithful pipe dangling at the side of his mouth, whilst he sings some classical ditty of the brotherhood.

There was a time when the industrial vocabulary construed the word *fechten* as a justifiable kind of begging, which did not disgrace a needy journeyman, but now it is inscribed in the black-book of the police; and if a poor fellow, compelled by sheer necessity, extends an unwilling hand toward a stranger, and a *gend'arme* espies him in the act, he is not only punished with arrest, but this fact is noted down in his pass-book, and subjects him, wherever he goes, to be watched with a suspicious eye, and to increased severity in case of a repetition of the offence.

Before the journeyman can become a *master* in his art, or profession, and fix his abode as such in a place of his choice, a few important steps remain to be taken. If a native of another state, he must obtain the freedom of the one of which he wishes to become a denizen; if merely of another parish, he must still get admission to parochial rights, wh'ch are sometimes expensive: in every case, he is required to accomplish single-handed, for strict inspection by the *Prüfungs Commission*, some model piece of workmanship, sufficient to show, not merely a moderate amount of skill, as when he was a candidate for a journeymanship, but his thorough knowledge of the *arcana majora* of his calling. If he can follow up the display orally, with theoretical evidence, he is entitled to be admitted forthwith to the Honorable Company of the Masters of the Trade.

XI. PUBLIC INSTRUCTION IN AUSTRIA.

OUTLINE OF THE SYSTEM.

AUSTRIA has a system* of education which, from the village school to the university, is gratuitously open to all, and which, in all its departments, is based on religion, and governed and molded by the State. Its universality is secured not by direct compulsion, as in Prussia, but by enactments which render a certificate of school attendance and educational proficiency necessary to exercise a trade, or be employed as a workman,† to engage in the service of the State in any capacity, or to be married. Besides this, it is made the interest of the wealthy landholders to contribute liberally for the education of their tenants and the poor, by throwing upon them the support of the pauper population.

All the institutions for education are under the supervision of a Board or Council (the Hof-studien Commission) at Vienna, composed of laymen appointed by the crown, and at the head of which a Minister of Public Instruction was placed in 1848. It is the duty of this body to investigate all complaints against these institutions; suggest and prepare plans of improvement, and counsel the crown in all matters referred to them. Under them is a graduated system of superintendence, to be exercised jointly, by the civil and spiritual authorities in the various subdivisions of the empire. The bishop and his consistory, jointly with the landestelle, has charge of all the scholastic institutions of the diocese; the rural dean, jointly with the kreisamt, of those of a district; the parochial incumbent, and the civil commissary, those of a parish. This general arrangement has reference to the Catholic establishment; but the proper authorities of the Protestant, Greek, and Hebrew churches are substituted for those of the Catholic, for all that regards the members of their several communions.

There are six classes of schools subjected to the superintendence of the education-board; namely, the popular, the gymnasial, the philosophical, the medico-chirurgical, the juridical, and the theological. The four last of these form separately the objects of various special institutions; and, combined together, they constitute the four faculties of the universities.

The gymnasium is the school for classical learning, mathematics, and elementary philosophy.

The popular schools comprehend the establishments of various degrees, in which instruction is imparted of a more practical character, to those whose station in life does not fit them for the study of the learned languages. The lowest of these are the *volks-schulen*, or, as they are often termed, the *trivial* or the *German* schools, established, or intended to be established, in every district or parish of town or county, for the primary instruction in religion and morality, reading, writing, and accounts. In the larger places are also numerous *upper schools*, *haupt-schulen*, wherein a somewhat more extended education is given, for persons designed for the mechanical arts and other similar pursuits. These have an upper class called Wiederholungs-schulen, or Repetition Schools, who receive instruction in drawing, elementary geometry, and geography, and with it is combined a Normal School for teachers in the volks-schulen. In the larger towns are also commercial academies, termed *real-schulen*, in which are comprised two divisions of scholars: the one general, receiving instruction in accounts, geography, and history; the other special, having, in addition thereto, teachers in book-keeping and the principles of trade for mercantile pupils, in natural history and rural economy for those intended for agricultural life, in mathematics, chemistry, and principles of art for students in the higher arts, and in various foreign languages, especially English, French, and Italian, for those who may desire to receive such instruction. In the *volks-schulen* girls are taught, except in rare instances, in separate rooms from the boys; and for the superior instruction of females there are distinct establishments corresponding with the *haupt-schulen* and *real-schulen* of the boys, many of them managed and directed by certain communities of nuns, which are especially preserved for the purpose of education. Industrial schools of various kinds, and for both sexes, are also in some parts combined with these more general educational institutions; but the expenses attending such establishments prevent their being very numerous.

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* The following account of the educational system of Austria is abridged mainly from Turnbull's Austria.

† Turnbull mentions an instance of a large manufacturer in Bohemia, who was fined for employing a workman not provided with the requisite certificates of education.

The establishments thus last described constitute the class of *popular* schools. The next above these are the *gymnasial;* of which there are one, or two, or several, in each district, according to the extent of its population. The pupils of the gymnasium are divided into several classes: the earlier ones are taught in religion, moral philosophy, elementary mathematics and physics, and Latin philology. To these subjects are added, for the more advanced classes—partly as perfect courses at the gymnasium, and partly as introductory to the higher instruction in the same branches at the lyceum or university—general history (and especially that of Austria), classical literature, Greek philology, æsthetics (namely, rhetoric, poetry, and a knowledge of the fine arts), and the history of philosophy. Above the gymnasium are the eight universities of Prague, Vienna, Padua, Pavia, Lemberg, Gratz, Olmutz, and Innspruck; to which must be added the Hungarian university at Pesth. These are divided into two orders—those of Prague, Vienna, Padua, Pavia, and Pesth, are of the first, having chairs for all the four faculties of theology, law, medicine, and philosophy; the others have a smaller number—as, for instance, Gratz, which has but three, having no professorship of medicine, and Lemberg, which has only two. In further addition, according to circumstances and localities, professorships are established, either at the gymnasium, the lyceum, or the university, in the Italian and Oriental languages, in theoretical agriculture, astronomy, chemistry, mechanics, and other branches of practical science.

In most of the provincial capitals, where no university exists (in such towns, for instance, as Linz, Laybach, Klagenfurt, &c.), there is an institution, under the name of *Lyceum*, which answers the purpose of a minor university; wherein public courses of lectures are given in some or all of the four faculties, and in other branches of knowledge. The *degree* cannot, indeed, be taken at the lyceum in any of the faculties; but certificates may be there obtained, which are accepted in lieu of those of the universities, for a large number of cases where certificates are required, and for youths who require them not, the education of the lyceum, extending as it does to the highest Greek and Latin classics, and natural philosophy, answers every purpose of general education. Of these lyceums, there are, in the empire, twenty-three under Roman Catholic direction; besides eleven Protestant, Lutheran or Calvinist, and one Unitarian. For the instruction of the Hebrew subjects there are gymnasiums and other schools, wherein the same books are read as in the general establishments of the empire, except only that works of Jewish are substituted for those of Christian theology. In special branches of knowledge, the government establishments are very numerous: medical and surgical academies, clerical academies, polytechnic schools, military institutions in all branches, and a college for the Eastern languages, &c.

The popular schools are inspected and directed by the parochial incumbent, who, with a view to this duty, is bound to receive instruction, previous to his induction to a benefice, in the system of scholastic management, or, as it is termed in the language of the edicts, the *science of pædagogy*. He is required, at least twice a week, at certain fixed hours, to examine and catechise the pupils, and to impart to them religious instruction; the parish or district being obliged to provide him with a carriage for that purpose, when the schools to be visited are distant from his residence. He orders removals from lower to higher classes, and grants those certificates, without which no pupil can pass from the popular school to the gymnasium. He is bound to render, periodically, statistical and discriminating returns on the state of the schools, both to his spiritual superior and to the kreisamt; to urge on parents the great importance of education to their offspring; and to supply books to those who cannot afford to purchase them, and clothes (so far as the poor fund or private contribution may enable him to do so) to such as, for want of clothing, are prevented attending the schools. Where children of different creeds are intermixed in one school, religious instruction and catechization is confined to the last hour of the morning and afternoon attendance, during which hour the non-Romanists are dismissed, to receive instruction elsewhere from their respective pastors; but where the number of non-Romanists is sufficiently great to support a separate school, the minister of that persuasion, whatever it may be, is charged exclusively with the same duties as, in the general schools, are imposed on the parish priest. To ministers of all professions an equal recourse is, by the terms of the ordinances, allowed to the aid of the poor fund and of the grants from the kreisamt. If the schools be too distant or too numerous for the proper supervision of the local minister, a separate instructor is named by the bishop, or, if the school be Protestant, by the provincial superintendent; and, for the visitors of all denominations, the expense of a carriage is equally borne by the public. Except in the points above enumerated, the parochial minister has no power to act, but only to report; in all those connected with defects or deficiencies of the buildings, he, in conjunction with the civil commissary, reports to the kreisamt, and in those of merely scholastic nature, as well as in the conduct of the teachers, he addresses his remarks to the inspector of the district.

The teachers at all the popular schools are required to produce testimonials from the Normal School at which they have been instructed, and receive their appointment from the diocesan consistory, or from the provincial chief of any special religions for which they may be intended, but require in all cases the confirmation of the landestelle. They are provided with residences attached to the schools, together with fixed stipends during good health and good conduct, and are allowed superannuation pensions, which, if they shall have served for a period of ten years, are extended to their widows, and to their orphans under fourteen years of age.

Each district has an *aufseher*, or *inspector* (named by the bishop from among the parochial clergy holding benefices therein), who compiles detailed statements on every point connected with education, for his spiritual superior, and for the kreisamt. Once a year he makes a tour of personal inspection, examines the pupils, distributes rewards to the best scholars, and supervises alike both the ministry and the teachers; most especially enforcing the rule, that those books only shall be used, and those instructions only be given, which have been commanded by imperial edict. Above these district inspectors, each diocese has a higher officer, under the name of *oberaufseher*, or inspector-general, who is named by the crown, and is in most cases a member of the cathedral chapter. His supervision extends not to the *volks-schulen* only, but also to the *real* and the *haupt-schulen;* and for these purposes he is the *district-inspector* for the city of his residence, and the *inspector-general* for the whole diocese. He is the official referee, whose opinion the consistory are bound to demand in every exercise of their educational functions, and by whom they are in fact principally guided; since every matter wherein their sentiments may not agree with his, must be referred to the decision of the landestelle. He examines and certifies teachers for appointment by the consistory; receives quarterly statements in all details from his subordinate inspectors, and embodies them into general reports, for the landestelle and the crown; finally, as supervisor of spiritual instruction, he examines candidates for orders, and novices for monastic vows, and grants certain testimonials of proficiency which are indispensable for their admission.

To the *episcopal consistories*, headed by the bishop, is committed the general supervision of all the scholastic concerns of the diocese, the regulations of matters of discipline, the communication of instruction, and the investigation of delinquencies. It is a part of their functions to order the erection of schools, to appoint the teachers, to authorize the payment of pensions to teachers in sickness or in age, and to their widows and orphans, when entitled to them; but in these points, as in all others which involve any exercise of real authority, patronage, or influence, their acts are invalid without the confirmation of the landestelle. For the professors of non-Romanist creeds, these respective functions are discharged in their several gradations by officers of their own persuasion. The Protestant *seniors* and *superintendents* are the district-inspectors and the provincial inspectors-general for their respective communities; and the functions of the diocesan consistories are transferred to the central Calvinistic and Lutheran consistories at Vienna.

The schools of higher degree, the Gymnasium, the Lyceum, the Theological Seminary, and the University, are all, as well as the popular schools, more or less subjected to the supervision of the diocesan and his consistory; but these depend more immediately on the educational board at Vienna. Over each of them presides a director, who is charged with the general management, in point both of discipline and instruction, acting under the orders of the board, or the edicts of the emperor. The various professors and teachers are all either named or approved by the landestelle, or the educational board; the same discriminating precautions being adopted as at the popular schools, for the religious instruction of those who profess non-Romish creeds. In every station, and in the various branches of education, the pupils are subjected to half-yearly examinations by authorized visitors; and from the result of these examinations, as well as from the testimonials which each is bound to produce as to moral conduct, and also as to religious knowledge from the minister of his communion, the director forms the reports which are furnished to the government.

For the erection of *popular* schools, certain rules are laid down which insure their erection as occasion may require. Although no ordinances compel education, yet the inducements held out to desire it are so great, that for schools of this description there is a constantly increasing demand, partly arising from the people themselves, and partly instigated by the spiritual and civil authorities; and, indeed, so urgent have of late years been applications to this effect, that it has become a usual, although not universal practice, to require of the parishioners, or the inhabitants of the district petitioning, that they shall bind themselves by voluntary assessment to bear the whole or a portion of the attendant expenses. After the locality has been fixed by the aufseher and the kreisamt, it depends on the landestelle to issue the decree that the school be built; and, this being done, the law then provides for its gratuitous erection and completion. The lord of the soil is bound to grant the land and the materials; the inhabitants of the district to supply the labor; and the patron of the parochial benefice the internal fittings-up; all subsequent repairs, as well as the hiring of buildings for temporary accommodation, being a charge on these three parties jointly.

Notwithstanding, however, these ample provisions for general education, it will be readily conceived, that in a country where certain classes possess large pecuniary means and high aristocratic feelings, instruction cannot be absolutely confined to public institutions. In Vienna and other cities, many academic establishments of a superior order exist, endowed in the manner of our public schools; and in these, or in the schools of the monasteries before mentioned, wherein boarders are permitted to be received, or, finally, under private tutors in their own families, a large portion of the higher classes receive their education.

In addition to the above summary of the system of primary schools in Austria, we present a few particulars as to the inspection of teachers and schools. The law requires that every district inspector, or overseer, must take care—

1. That his district is supplied with a sufficient number of school-buildings; and for this end, he is empowered, in conjunction with the village or town magistrates, to levy a school-rate upon the householders of his district.

2. That all the new school-buildings, which are erected from time to time in his district, are built in healthy situations, not near any noisy workshops, or any swamp or bad smells; that the class-rooms are built according to the plans, which have been prescribed by government; that the class-rooms are well provided with desks, forms, writing-boards, maps, and all necessary school apparatus.

3. That the school-buildings are kept in good repair, well and frequently white washed, and well warmed and lighted.

4. That a good and suitable house is provided for the teachers and their families, and that it is kept in a good condition and fit for their use.

5. That the *curé* of each parish regularly inspects his school; that he watches the conduct and character of the teacher; that he examines the scholars frequently; and that he aids the teacher by his counsel, advice, and assistance.

6. That the parishioners send all their children, who are between the ages of six and twelve, to school regularly, and that they pay the weekly school-fees in a regular manner.

7. That each parochial magistrate is zealous, in enforcing a regular school attendance, in supporting the teachers, and in protecting them from the least disrespectful treatment.

8. That regular periodical reports of the state and progress of the schools in his district are forwarded to the county educational magistrates: who, in their turn, are required to forward a general report of the progress of education in the whole country to the Minister of Education in Vienna.

By these means the government in Vienna is informed every year of the actual state and progress of education, throughout every parish of their great empire; of the wants and difficulties of those districts which require assistance; of the results of particular experiments in particular schools, in the remotest provinces; and of the actual number of children in each county, who have not attended the classes with sufficient regularity.

Each inspector must visit all the primary schools in his district at least once every year.

For this purpose he is required to divide all the schools in his district into two parts, and to visit one of these in the latter part of one year, and in the early part of the succeeding year, so as to see each school in spring and winter alternately.

The overseer is required to give public notice some time previously of his intention to visit any school, and of the day upon which he will publicly examine it.

The law *requires* the parochial magistrates, the religious minister, to whose sect the school belongs, and a committee of the householders of the parish, to be present at the examination, and impose a penalty on any of those persons, who absents himself without satisfactory excuse. The overseer is required to write down the names of the absentees, in order that the magistrates may be informed, and may impose a legal fine to which their absence renders them liable.

The teacher is required by law to give all his children notice of the day, on which the examination will take place, and to order them all to attend at a certain hour. He is also required to bring the book, in which the daily absentees are marked down, the copy-books and exercises of the scholars, the monthly register of the way, in which each child has attended to his work, an account of the progress the classes have made in the several subjects of instruction, and any notes or observations he may have made in his note-book for the inspector. These several documents are laid before the overseer at the public examination, and are examined by him. The knowledge that this will be done stimulates both scholars and teachers, as each is as unwilling to be reproved for carelessness or incompetency, as he is anxious to be praised for industry and skill.

The law next directs each overseer—

1. To examine what character the teacher has borne in his neighborhood; how he acts toward his scholars, and toward those who live about him; whether he teaches skillfully or not; what methods of teaching he pursues; whether he is industrious and zealous in his work, and whether he continues to aim at self-improvement.

2. To examine the registers of the school, and to observe, how often each child has been absent from the classes; to observe the manners of the children in the classes and in the play-ground, the manner in which they answer the questions put to them, their demeanor to one another and to their teachers, their appearance, cleanliness, and the state of their health.

3. To observe what interest the parishioners and parents take in the state of the school, and in the education of their children; how far they assist the teacher to secure a regular attendance; what excuses they generally make for the occasional absences of their children; with what degree of respect they treat the teachers; and whether they pay the weekly school-pence regularly.

4. To observe the state of the school-buildings, whether they are built in a healthy locality, and after a good and reasonable plan; whether the class-rooms are dry and light; whether they are furnished with sufficient school-apparatus; and whether they are supplied with sufficient quantities of fuel for the daily consumption during winter.

5. Whether the religious ministers of the sect, to which the majority of the scholars belongs, visits and inspects the school-classes often; whether he treats the teachers in a wise and judicious manner; whether he uses his influence among the parents to secure a regular attendance at school; and whether he attempts to diminish any little misunderstandings between the teachers and parishioners, when any such arise.

6. Whether the civil magistrates are strict in punishing any infraction of the school regulations.

The law then proceeds to require, that as soon as the overseer has examined the lists, &c., laid before him, he shall commence the examination. It is formally opened by a short prayer and a speech. After this the overseer examines the children, class after class, beginning with the first.

He first requires the children to read aloud something selected from their school-books, and then questions them about the subject matter of the exercise.

He selects some particular child to answer each question he asks, and does not allow the whole class to shout an answer to it simultaneously, so as to conceal the idleness and ignorance of some by the knowledge and ability of others.

The overseer then dictates something to the school, and requires them to write from his dictation. The scholars are then made to write a copy, and are afterward examined in arithmetic and mental calculation.

The overseer is particularly required to observe, during the course of the examination, whether there are any scholars, who appear to have been neglected by the teachers, or whether the instruction has been bestowed equally upon all.

The law requires the overseer at the end of the examination, to read aloud to the whole meeting, the names of the twelve scholars, who in his opinion have made the greatest progress in their studies, or who have evidently been the most industrious; to praise them publicly for their industry and ability, and to encourage them and all the rest of the scholars to renewed exertion.

The overseer is next required to publicly reprove any scholar, who has been very idle or negligent in his studies, or in his attendance, and then to urge the children to make fresh exertion to prepare for the next public examination.

After the examination is concluded, the overseer orders whatever repairs the school-building stand in need of, and whatever books and apparatus are required for the class-rooms. He then asks the parochial magistrates and clergy privately, if they have any fault to find with the teachers, and if they have, he examines into the cause of complaint, and acts between the parties as impartial judge. On the other hand, if the teachers have any cause of complaint against the parochial authorities, they state it to the overseer, and he, after examining into the matter, decides upon it as an arbitrator, and as a protector of the teachers.

I have no need to point out how these visits of the representative of the central governments stimulate all the teachers, children, and parishioners. Each is afraid to be found behindhand in the performance of his duties; and each is desirous to merit public praise for his efforts and success. The teacher is protected from neglect, insult, or injudicious interference, while he is at the same time kept under a wholesome check. His close connection with the emissary of the government of the empire, gives him a standing among his neighbors, and covers himself and his office with the respect of the people.

The law respecting the teacher of a primary school prescribes as follows:

The teacher of a primary school must be a person of good sense, having a good, clear pronunciation, good health, and a sound constitution.

The teacher must not merely understand the science of pedagogy, but he must be able to practice it. In order that he may do this, he must not be satisfied with merely having obtained his diploma; he must afterward seek to perfect his knowledge by the study of able and scientific works upon this science; he must make and note down observations on the results of different methods; he must not feel ashamed to learn from other teachers, or even from his own assistants; and he must attend to the remarks and advice of the inspectors.

He must be careful to speak clearly and loud enough to be heard by all his class, when giving instruction.

He must be careful not to neglect any of his scholars, by attending too exclusively to the more clever children.

He must be particularly careful to make his scholars obedient, orderly, and quiet in their classes, industrious, modest, clean, and polite.

He must never endure a lie, and must prevent tale-telling, teazing, and vexing of one scholar by another, buying, selling, and exchanging in school, eating during the hours of instruction, frequent going out of the class-room, careless sitting postures, and *concealment of the hands.*

He must be most careful to prevent any unnecessary loitering in coming to school, or in returning home, all rough handling of the school-books, loud and unseemly shouting and screaming, and mingling of the boys and girls, &c.

He must take care that the children are clean; that they come to school with clean hands and faces, with cut nails, with combed hair, and with tidy clothes.

He must warn the children not to drink, or to lie down upon the cold ground, when they are hot.

He must warn the children against eating roots or berries, whose properties they do not know, and against playing near deep water, or in public streets.

In winter he must take care that the children shake the snow from their clothes and shoes outside the school door.

He must send unhealthy children home again, and prevent them mingling with the others

He must take care that the school-room is kept sufficiently warm; that it is well aired when the children are out, and that it is well cleaned every second day.

In order to make the scholars industrious and obedient, the teacher must win the respect of his scholars; he can not do this by a sullen, angry countenance, or by using the ruler, or by making a noise; but by evincing knowledge of his business, by command over himself, and by a manly, sensible, and *unchangeable* behavior.

If the teacher leaves his class-room often in the day, or is inattentive or careless in his manner of imparting instruction, or is lazy, impatient, or irritable, the consequence will be, that his scholars will be disorderly, and will gain little or no good from their school attendance.

The teacher must guard against the extremes of both kindness and harshness; he must act like an affectionate, but sensible father; he must make a great distinction between his manner of reproving acts of mere childish carelessness, and actual sins; he must never employ severe punishments, as long as he can hope to succeed by milder means; and he must avoid any thing like unfairness in his praises and punishments.

The teacher must carefully avoid hastily resorting to the rod; he must never box a child's ears; or pull or pinch them; or pull its hair; or hit him on the head, or any tender part; or use any other instrument of punishment, than a rod or stick; and that only in cases of great faults. Even in these cases, this kind of punishment may only be administered after having obtained the consent of the overseer, and of the parents of the child, and in their presence.

The teacher must take care to be polite and friendly to the parents of his scholars; if he is obliged to complain to any of them of their children, he must do it, without showing any thing like personal irritation; he must never send his complaints to them by any of his scholars, or by third persons; for, by such means mistakes are easily made, and unkind feelings are often excited.

If the teacher is obliged to speak severely to any one, he must be careful not to do so in the presence of his children.

The teacher must not engage in any trade or business; he must not keep a shop, he must not play music at public festivities, and he must avoid all companies and places, which would be likely to throw any suspicion on his character, or to injure his reputation.

SCHOOLS FOR ELEMENTARY EDUCATION, IN AUSTRIA, IN 1838.

Countries.	Population in 1838.	Children from 5 to 13 years of age.	Primary Schools.		Repetition Schools.		Sexes attending school.		Total Children at school.	Instructors.			Cost of Schools in Florins.
			No. of Primary Schools.	Children in actual attendance.	No. of Repetition Schools.	Children in actual attendance.	Boys.	Girls.		Religious.	Lay.	Total.	
Lower Austria	1,400,000	157,105	1,101	154,179	1,019	58,200	113,891	98,488	212,379	1,127	2,212	3,339	341,007
Upper Austria	846,000	90,576	626	86,485	606	41,435	65,580	62,340	127,920	718	1,114	1,832	185,871
Bohemia.............	4,173,000	526,569	3,470	494,229	3,431	229,812	376,560	347,481	724,041	1,361	5,781	7,142	475,967
Moravia and Silesia...	2,172,000	287,732	1,886	272,638	1,855	177,239	231,826	218,051	449,877	1,399	3,026	4,425	264,706
Gallicia..............	4,728,000	514,308	1,869	67,278	591	30,022	67,065	30,235	97,300	905	2,037	2,942	124,627
Tyrol................	839,000	106,439	1,618	107,507	1,191	46,673	80,697	73,483	154,180	1,539	2,185	3,724	101,486
Styria	976,000	101,990	624	76,869	567	35,106	61,463	50,512	111,975	647	967	1,614	89,626
Caryinthia and Carniola	764,000	85,533	365	27,817	404	16,805	24,435	20,187	44,622	358	518	876	110,545
Illyrian coast.........	476,000	59,250	111	9,917	84	3,316	9,588	3,650	13,238	101	226	327	65,738
Lombardy and Venice	3,664,000	588,665	5,178	258,009	230	3,966	191,167	70,808	261,975	3,697	5,905	9,602	826,300
Transylvania.........	2,026,000	202,600	1,522	51,348	30	720	32,535	19,533	52,068	423	1,507	1,930	60,000
Military Frontier.....	1,198,000	126,674	1,113	64,550	776	20,903	56,303	29,150	85,453	862	1,266	2,128	130,598
Dalmatia	390,000	39,000	53	3,962	"	"	3,355	607	3,962	46	98	144	19,370
Total....	23,652,000	2,886,441	19,536	1,674,788	10,784	664,197	1,314,460	1,024,525	2,338,985	13,183	26,842	40,025	2,795,791

SUPERIOR EDUCATION IN AUSTRIA.

TABLE II.—INSTITUTIONS OF SECONDARY AND SUPERIOR EDUCATION.

	No.	Professors.	Students.	Outlay.	Bursarships.	Endowments.
Universities.				florins.		florins.
Vienna	1	71	4,718	165,671	256	21,583
Gratz	1	28	876	25,372	47	1,267
Innsbruck	1	24	317	25,053	52	3,593
Prague	1	63	3,341	66,864	55	3,065
Ollmütz	1	26	640	29,525	112	5,600
Lemberg	1	41	1,403	53,593	48	4,480
Pesth	1	....	......	....	....	......
Pavia	1	60	1,316	80,821	24	4,200
Padua	1	40	1,260	98,646	....	......
Total (without Hungary)	9	353	13,871	545,545	594	43,788
Lycea.						
Salzburg, with Theol., Philos., and Medicine	1	20	212	23,465	7	455
Linz “ “ “ “	1	12	167	12,090	10	362
Laibach “ “ “ “	1	23	299	22,160	39	2,294
Klagenfurth “ “ “	1	14	171	4,624	26	1,409
Klausenburg “ “ “	1	14	330	8,810	....	......
	5	83	1,179	71,149	82	4,520
In Hungary, 14*	..	....	......	....	....	......
Seminaries for Divines.						
Vienna (Protestant)	1	5	59	17,007	30	2,400
Redemptorists (for their order)	1	6	8	....	....	......
Admont	1	6	8	....	....	......
Mantern	1	7	9	2,650	....	......
Tarnow Przemysl	2	8	156	4,193	....	......
Lemberg	1	5	31	3,010	....	......
Carlowitz (Greek Church)	1	9	30	4,765	....	......
Zara	1	7	46	15,128	....	......
Hermannstadt (Greek)	1	1	60	180	....	......
In Hungary, 2†	10	54	409	46,933	30	2,400
Colleges of Philosophy‡	25	166	3,192	127,089	38	2,140
Special Institutions for boys	31	195	3,508	248,151	163	29,097
Special Institutions for girls	10	29	429	21,775	21	2,026
Gymnasia§ (Grammar-Schools) Catholic	116	899	25,458	505,350	446	20,515
Gymnasia§ (Grammar-Schools) Protestant	14	89	2,451	12,963	13	72
	198	1,378	35,038	915,328	681	53,850
Total cost of the higher establishments for education, without including Hungary	222	1,868	50,497	1,578,955	1,387	104,558

* 2 at Presburg; 2 Raab; 1 Agram, Debreczin, Eperies, Erlau, Grosswardein, Käsmark, Cashau, Oedenburg, Papa, Saros-Patak.

† At Kerestur and Torda.

‡ At Krems, Kremsmunster, Görz, Trent, Budweis, Leitomischl, Pilsen, Brünn, Nikolsburg, Przemysl, Tarnopol, Czernowitz, Zara, Milan, Brescia, Cremona, Mantua, Bergamo, Como, Lodi, Venice, Verona, Udine, Vicenza.
In Hungary, at Stein am Auger and Szeyechin, 2.

§ Hungary has 67 Catholic and 13 Protestant Gymnasia.
The Mining Academy at Schemnitz has 7 Professors, 233 Students: it costs 11,500 florins, and has 55 Bursarships endowed with 11,000 florins annually.

TABLE III.—ACADEMIES AND BOARDING-SCHOOLS.

	No.	Professors.	Pupils.		Outlay in florins.	Scholars.			
						Receiving instruction gratis in the house.		Receiving stipends out of the house.	
			In the house.	Out of the house.		No.	Charge.	No.	Charge.
For Boys:—							florins.		florins.
For general education..	98	727	6,652	3,153	1,143,286	2,539	524.292	41	5,958
For Theology	51	189	3,233	1,219	634,172	2,317	460,888	835	21,149
For Military Schools..	40	181	8,457	....	613,332	2,725	450,036	....	....
For Girls	101	612	4,125	586	625,286	2,549	855,204	10	1,810
For both...............	17	99	1,537	3,026	295,166	1,445	167,652	2,373	77,331
Total....	307	1,808	19,004	7,984	3,311,342	11,575	1,957,572	2,759	105,748

TABLE VI.—ACADEMIES OF SCIENCE, LITERATURE, AND THE FINE ARTS, IN 1836.

	No of Establishments.	Directing.	Members.				Total.	Pupils.	Expenditure.	Bursarships.	
			Ordinary.	Honorary.	Corresponding.	Contributing.				No.	Endowment.
Academies of Science and Literature	18	12	1,824	520	607	1,488	3,070	276	59,757	21	3,622
Academies of Fine Arts	6	56	127	204	32	60	460	2,798	92,402	40	2,273
Agricultural Colleges and Unions	11	3	4,343	362	1,004	265	5,945	29	21,946	3	1,781
Museums, &c.	10	62	2,573	405	66	2,302	8,222	704	21,440	12	16
Total..........	45	133	8,867	1,491	1,709	4,115	12,697	8,807	195,545	76	7,692

XIV. PUBLIC INSTRUCTION IN WIRTEMBERG.

WIRTEMBERG was one of the earliest of the German states to establish a graduated system of public instruction, from the common school to the university, and has always shared largely in all the educational movements of Germany. The framework of the school system in operation in 1848, was substantially the same as it was in 1538, enlarged from time to time to meet the demands of the age for new institutions and a more liberal and practical instruction. With a population of 1,750,000 there were the following institutions, aided by the government, in 1847:

One University at Tübingen, with six faculties, seventy-one professors, and 800 students.

Nine Real Schools, with seventy teachers.

Six Gymnasia, each with ten professors and three assistants, (that at Stuttgart has twenty-six professors.)

Five Lycea, each with seven teachers.

Eighty-seven Latin Schools, in which eighty-six classical teachers, sixty-six real teachers, and forty-four assistants are employed.

One Protestant Theological Seminary at Tübingen, with fifteen teachers, and four preparatory theological schools in other parts, each having six teachers and thirty pupils.

One Catholic Theological Seminary.

One Polytechnic School, with twenty-one teachers and a course of instruction embracing four years, for engineers, architects, &c.

One Institute for Agriculture and Forestry at Hohenhein, the most complete agricultural establishment in Europe.

One Veterinary School, with five professors.

Two Orphan Houses, each having 278 orphans.

Seven Schools of Art and Drawing.

One Superior Seminary for Protestant girls, at Obenstenfeld, with eleven teachers.

One Superior Seminary for Catholic girls, at Stuttgart, with thirteen male teachers, and thirteen female teachers.

One Institute for Deaf Mutes and the Blind.

One thousand four hundred and fifty-five Protestant Common Schools.

Seven hundred and eighty-seven Catholic Schools.

Six Teachers' Seminaries.

These institutions, providing on a liberal scale for the educational wants of the whole community, are all in some way aided by the government, and subject to its supervision through the Home Department. Subordinate to this department is the Evangelical Consistory, having charge of the Protestant, and the Church Council, having charge of the

Catholic seminaries, of the higher grade. Below these, for each of the four circles, or districts into which the kingdom is divided, there are Superintendents of each denomination, for the Real and Latin Schools; and School Inspectors for the Common Schools; and Directors of School Conferences, (Teachers' Institutes,) which are held four times in each year, for the improvement of the teachers, at different points.

Each *locality*, comprising thirty families, is compelled by law to have a primary school. Localities containing a population of less than thirty families, are compelled by law to unite with a neighboring locality in the establishment of a school. If the neighboring locality is at a distance of more than two and a half English miles, or the road thereto dangerous, then the Government Committee of Education can decree the establishment of a separate school even for fifteen families.

If in a community of different religious confessions the minority comprises sixty families, they may claim the establishment and support of a school of their own confession at the expense of the whole community. The expenses are paid by the whole community, without regard to religious confessions, and by each individual in proportion to the amount of taxes paid by him. In poor communities the government contributes in part toward the salary of the schoolmaster and repairs of the school.

The salaries of the schoolmaster are, in places containing 4000 inhabitants, 350 florins* and house-rent; in places containing less than 4000 and more than 2000 inhabitants, 300 florins, and house-rent. In a school where more than sixty scholars attend, 250 florins, and house-rent. In a school where less than sixty scholars attend, 200 florins, and house-rent.

Second schoolmasters receive a salary of 150 florins, and are allowed one room and fuel. An assistant schoolmaster (candidate) receives a salary of 120 florins. In a school where the number of scholars exceeds ninety, two schoolmasters are allowed; if more than 180 scholars, three schoolmasters; if more than 270 scholars, four schoolmasters; and so on in proportion.

The school hours are, in summer, four hours per day; in winter, six hours per day.

The school is under the inspection of the clergyman of the confession to which the schoolmaster belongs, and under the control of the presbytery.

There is in each district a special school inspector, who is a clergyman. The visitation of the schools is made by the school inspector of the district, the clergyman, and the presbytery of the community. The attendance of every child at the primary school is compulsory, unless he frequents a superior school, or receives private instruction, such as he would obtain at the primary school. If parents forbid their children's attendance at the school, or do not allow their receiving private instruction, they subject themselves to a fine, and even imprisonment; and if afterward they should still refuse to allow the children to attend the school, then the police is requested to adopt such measures as will compel the children to visit the school. If a child, by reason of health or otherwise, is unable to attend the public school, then the parents or guardians are obliged to see that he receive private instruction, and, if unable to pay for it, the community is obliged to supply the means. Children who have not frequented the primary schools, are equally obliged to attend the public examinations.

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* A florin is thirty-eight cents.

The right of selecting a teacher for a vacant school belongs to the locality, but in many instances, the locality has ceded this right to the authorities having the supervision of the seminaries. The professional training and improvement of teachers in public institutions are provided for by six Teachers' Seminaries, sixty Teachers' Associations or Conferences, and twelve annual courses of one or two weeks duration, similar to our Teachers' Institutes, held at twelve different places in the kingdom.

The candidates for the post of schoolmaster are not permitted to enter the seminary before they have reached seventeen years of age; nor does their education for that most responsible situation, nor the proofs of their capability for it, begin at their entrance into the Normal School. Long before that period they must give notice of their intention to devote themselves to such pursuits, and must undergo a previous preparation of two years ere they are allowed to enter the seminary.

The course lasts two years, tuition is free, and the poor receive assistance as to board.

The Seminary at Esslingen, under Director Denzel, is one of the oldest and most celebrated seminaries in Europe. It was founded in 1757, and with only sixty pupils, it has a director, two chief masters, and three assistants. The director is the author of the most complete treatise on education in any language. It is entitled the "*Introduction to the Science and Art of Education and Instruction for Masters of Primary Schools.*" Six volumes, Stuttgart, 1839. The author thus explains the reason of his undertaking the work in his preface to the last edition:

> "When, three and twenty years ago, I entered upon my present occupation, great exertions were already in progress for the improvement of the elementary schools of Germany. Much had been accomplished in particular states, and much active discussion was going on with respect to the methods pursued, and the best means of raising the qualifications of the schoolmaster. But the times required something more than had yet been done for the popular schools. It came more and more to be understood that the school was not merely a place of instruction, but of education; that the common and necessary acquirements of the arts of reading, writing, and ciphering were not to be the sole or the principal objects of its care, but rather the unfolding and strengthening of the mental and bodily powers of the child conformably with nature and circumstances. When this began to be held to be the province of the elementary school, a new era broke upon it.. Viewed in this its new and loftier position, it assumed a totally different aspect, and all relating to it required to be dealt with in a more serious and scientific manner. This salutary change of view respecting the real character and destiny of the elementary school, though long in progress, became at length universal, chiefly through the genius and exertions of Pestalozzi, whose principles, even where only partially adopted, facilitated and infused a new spirit into the processes of teaching."

He proceeds to state that, being called at that period to the duty of training schoolmasters, and therefore desiring to find some manual or treatise which embraced the entire subject, according to the enlarged views then entertained of it, he was unable to meet with any that satisfied his wishes. Those that he found, either merely embodied the old views or contained fragments only of the new. After many fruitless attempts to compose out of those fragments something that would serve as a groundwork for his course of teaching, he found himself compelled to form a treatise for himself; which has grown, with the experience of twenty years, into the valuable "Introduction," now widely known by his name. The following is the summary of his introductory course of instruction to teachers:

PART I.

- Chap. 1. Man as an organized, sentient, and intellectual being.
- 2. Constitution and qualities of the body and mind.
  - § 1. Of the body.
  - § 2. Of the mind and its principal faculties.
    - A. The feelings.
    - B. The understanding.
    - C. The will.
      - Union of the highest powers in a Christian faith.
      - Varieties of natural constitution and disposition, and their causes.
- 3. On the liability of the faculties and disposition of childhood to take a wrong direction.
- 4. On the natural course of development in childhood, boyhood, and youth.
  - § 1. On the gradual development of the mental powers.
- 5. Man in his social state.
- 6. Man as an immortal being.

PART II.

- 1. On education in general.
- 2. On the training of the body.
- 3. On the training of the mind.
  - § 1. On the regulation of the feelings.
  - § 2. On the strengthening of the understanding.
    - Observation and attention.
    - Imagination.
    - Memory.
    - Judgment.
  - § 3. On the regulation of the will.
    - The moral sense.
    - Force of habit.
    - The love of what is right.
    - Obedience.
    - Perseverance.
    - Order and punctuality.
  - § 4. Religion—The best means of fixing religious impressions on the mind of a child.
- 4. On educating boys and girls together.
- 5. On rewards and punishments.
- 6. On elementary instruction.
  - § 1. Subjects—On the proper periods for commencing each.
  - § 2. Method—The synthetic.
    - Requisites of good teaching.
    - Apparatus, &c.

In his second volume, the author enlarges on some of the principles laid down in the first, and on the spirit and object of the primary school, the best modes of organization and management, &c. The third and remaining volumes form a School Manual of four complete "courses," for children between the respective ages of six and eight, eight and ten, ten and twelve, twelve and fourteen. The subjects treated of at length, for the guidance of teachers, are object lessons, instruction in reading, writing, and ciphering, religious instruction, grammar and etymology, geography, elements of geometry, singing, elements of natural philosophy and natural history, composition, &c. General expositions of the principles to be kept in view, and the ends to be aimed at, are given, together with specimens of the lessons in detail, and the substance of a useful course under each head.

The following notice of education in Wirtemberg, is taken from Kay's "*Social Condition and Education of the People.*"

I traveled through the kingdom of Wirtemberg from Ulm to a town in the interior by night. My companions in the eilwagen, or diligence, were an Oxford Fellow, a German, and a Frenchman. The subject of our conversation, during one part of the night, was, the efforts of the Germany governments and people to educate the children of their poor. The Oxford Fellow would not credit the account I gave him of these efforts, and affected, moreover, to laugh at them as useless and chimerical. I saw it would be impossible to make a convert of him by argument, and so, to save words, I ended the conversation by saying, "Well, if you are ever in the streets of a German town between eight and nine o'clock, or between twelve and one o'clock, in the morning, observe what is then going on, and remember what I told you."

The next morning it so happened, that we stopped about eight o'clock to change horses, in a small town, about half way between Ulm and Stuttgard. It was just before the primary schools commenced their morning's work. All the children were on their way to their respective classes. I made the "Fellow" get out of the diligence, and regard what was going on in the streets at that early hour.

The street in which we had drawn up, was full of clean, neatly-dressed children, each carrying a small bag of books in his hand, or a little goatskin knapsack full of books on his back. There were no rags, and no unseemly patched and darned clothes. The little girls were neat, their hair was dressed with a great deal of taste, their frocks were clean and tastefully made. Their appearance would have led a stranger to imagine, that they were the children of parents belonging to the middle classes of society. I said to my companion,—"These orderly, clean, and respectable-looking children are, many of them, the sons and daughters of the poorest artizans and laborers." In England, they would have been the "ragged-school children," or the squalid players in the gutters and back alleys. There there was no perceptible difference between the children of the poorest laborer and the children of the shopkeeper or rich parent. They all looked equally clean, respectable, polite, and intelligent. I said to the Fellow, "Are you convinced now?" He turned to me and answered, "Yes, yes; this is, indeed, a very interesting and very curious sight. I do not any longer doubt the accuracy of all you told me last night. It is certainly very remarkable." That ten minutes taught my companion more than he would have learned by days of argument.

PART II.

German Contributions

TO THE

SCIENCE AND ART OF TEACHING.

Republished from Barnard's American Journal of Education.

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CATECHISM

ON

METHODS OF TEACHING.

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CATECHISM ON METHODS OF TEACHING.

TRANSLATED FROM DIESTERWEG'S "ALMANAC," (*Jahrbuch,*) FOR 1855 AND 1856,

BY DR. HERMANN WIMMER.

I. INTUITIONAL INSTRUCTION, (*Anschauungsunterricht,*) BY A. DIESTERWEG.

1. *What is the object of intuitional instruction?*

To prepare the child who has just entered the primary school, for formal school instruction.

2. *What is therefore its external position in the course of instruction?*

It forms as it were the bridge from the liberty of home life to the regular discipline of the school; it is in regard to instruction, an intermediate between home and school.

3. *What is to be effected by it?*

The children are to learn to see and to hear accurately, to be attentive, to govern their imaginations, to observe, to keep quiet, and to speak distinctly and with the right emphasis.

4. *With what objects must this preparatory education deal; having in view a "formal" aim, but no acquisition of knowledge?*

Perceptible or perceived objects; hence its name. It has a two-fold meaning; real observation by the senses, especially by eye and ear,—and such management, by the teacher that the objects, their qualities and conditions, are made vivid interior perceptions.

5. *By what do we know that its end is attained?*

By the whole appearance of the children, and particularly by their correct and proper speech and pronunciation, which can not be valued too highly from the first beginning.

6. *What is the beginning of this instruction?*

After a conversation about father and mother, to gain their confidence, and after some directions concerning the mode of answering and behaving in the school-room, the first thing is to observe the room and its contents. The pupil is to be made acquainted with all around him; he must learn to see, to name, and to describe exactly, all objects in the room.

7. *What must be chiefly attended to from the first day?*

(*a*) A clear, emphatic statement in complete sentences. E. g. What sort of thing is this? This thing is a chair, etc.

(*b*) A comprehensive view of all qualities observed in an object, at the conclusion of each exercise. This is of the greatest importance in all instruction.

8. *What is the second step?*

Observation of the whole school, school-house, road, village or town, in their external qualities.

9. *The third?*

Observation of some of the animals in the place, and of man.

10. *What next?*

This depends on circumstances. In general, it may be said, that the result of this instruction may be secured by from four to six hours a week during the first year. The duller the children are, the longer it must be continued. It may be further extended to the trees and plants of the neighborhood, the trades and employments of the people in the place, clouds, weather, wind, fire, water, sun, moon, stars, etc.; in short, to all objects accessible to real observation. Accurate contemplation or description of models of mathematical bodies may also be very advantageous. The teacher should draw the streets and houses of the place before the eyes of the pupils on the blackboard; he may resort to "*Stäbchenlegen,*" (laying down small sticks; see Diesterweg's *Kleinkinderschule.* (Primary School,) fifth edition, and Stangenberger's book;) he may use the picture tables; in one word, he may arrange any variety of useful exercises to attain the important end. It is least possible in this branch, to prescribe in books a regular and equal course to all.

Of the greatest importance, we may repeat, is the way in which the children speak and pronounce. A teacher who is unmindful of this, prepares trouble for his whole professional career. Instruction in teaching, if the teacher understands it, is at the same time instruction in language. It is not, however, instruction in grammar; yet it leads to the understanding of the language, and to attention to words and expressions in general. Not only the nouns, adjectives and verbs, but the prepositions and conjunctions also, should be managed without the mention of their names, but by using practical examples of them. It is not the object to explain these words, but to use them correctly by means of a variety of exercises.

The best manuals for the Intuitional Method direct such instruction, and the teacher shows his skill in the suitable choice of objects, and especially in the varied and attractive treatment of them. Less depends on the selection of what is to be discussed, than on the way in which the attention of the children is secured. If the proverb "Every way is good except the tiresome" be true any where, it is true here. As soon as the children get tired, the subject must be dropped. Success depends entirely on the activity of the children. This is true, indeed, of all teaching, but preëminently so where knowledge and technical ability are not aimed at, but only an awakening of the slumbering faculties, a "formal" end. Attention, liveliness, a desire to observe, and to answer, etc., are the measures for judging of success.

If the result is secured, i. e., if the pupil is prepared for learning, the teacher leaves this instruction and advances to study proper, which is likewise intuitional. That is, he proceeds always from facts, from real, undeniable and undisputable facts. The importance of this principle is not yet enough understood, nor has the subject been exhausted by teachers or educators.*

II. INSTRUCTION IN READING, BY HONCAMP.

Reading Writing together (*Schreib-Lese-Unterricht.*)

1. *Shall the first instruction in reading be begun in connection with the first instruction in writing?*

Most certainly, for reading and writing are most intimately connected.

---

* Harder, in his manual, (Altona, 1853.) differs from these views so far as he makes this instruction the basis of real instruction, and likewise real instruction itself. "But where *matter dominates,*" says Kalisch, "pedagogical management and general cultivation is at an *end; for to the teacher, matter* is *secondary.*"

2. *Was instruction in the former separated from the latter in olden times?*

From ancient times writing was accompanied by reading; but not until modern times, (since Graser,) has reading been connected with writing, in all its steps.

3. *Is this method according to nature?*

It is natural, because reading and writing are properly but two different sides of the same thing, i. e., of the written language.

4. *But is it not easier, first to practice the one, and not to practice the other, until the greater difficulties of the former are mastered?*

Quite the contrary. Reading and writing assist each other mutually, and experience teaches, that the first instruction in either, is made more efficient by their union.

5. *In what way shall they be connected?*

The teacher can either (analytically) view the spoken word as a sound, and then have it (synthetically) represented by the signs for the sounds, i. e., the letters, in which case writing is prior; or he may first view the written (printed) word as a representation of the sound, (analytically,) and then have it (synthetically) reproduced by pronouncing or reading—in which case reading is prior. We have, therefore, either a *Lese* (reading)-*Schreib* (writing)-*Methode*, or a *Schreib-Lese-Methode*,—(Writing-reading-method.)*

6. *What may be said in favor of the reading-writing method?*

Writing always precedes reading; the inventor of writing did it for reading's sake; he wrote first, and then he read. Hence, instruction in reading must be joined to instruction in writing.

7. *What may be said in favor of the reading-writing-method?*

In answering this question we take, not the place of the inventor of writing, but of him to whom he first communicated his invention; the inventor taught him first to read and then to write, and in like manner, according to nature, we must proceed now.

8. *Which method is to be preferred?*

It is nearly indifferent, either in regard to subject or result, whether we put the pupil in the more artificial place of the first inventor, or in the more natural place of the first pupil.

9. *What rules must be observed in the adoption of either?*

Reading and writing must always be intimately connected; the elements of the word must be found by analysis, and made the basis of study; and only such words and syllables must be read and written, as have a meaning for the pupil.

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* Reading is always analytical, writing synthetical; but the method of teaching may be different. If reading be separated from writing, the proceeding may be

(1,) Synthetical; where the letter is given, and with it either (*a*) the name of the letter without the sound—*buchstabirmethode*, spelling method; or (*b*) the sound (*laut*) of the letter without the name—*lautirmethode*, phonetic method; or (*c*) the sound and the name of the letter, spelling and phonetic method combined, (*Wilging's*, *Kawerau's*;) or

(2,) Analytical; where the pupil reviews the written (printed) matter as a whole, that he may resolve it into its elements. The whole is (*a*) a proposition or sentence, (Jacotot's method;) (*b*) a word, (Gedike's method;) or

(3,) Analytico-synthetical; the child, to become prepared for reading, is made to resolve sentences into words, words into syllables, syllables into sounds, and then the teacher proceeds by the combined method. See Jacobi's book on these methods; also Honcamp's "*Volksschule*," No. 10, p. 20.

In the *Schreib-Lese Methode*, (and vice versa,) it is well to give also the name of the sound and letter.

10. *Is it not requiring too much of a child, who has not yet mastered the mechanical part of reading, to ask him to think of the contents and understand what he reads?*

Not at all; for word and idea are one, and speaking and thinking are not to be disconnected. "Given the word, to think of its meaning," is not an operation which the pupil has to learn; he does it of himself and has always done it. But to speak, without joining an idea with it, the pupil has to learn, and that too in order to unlearn it afterward with much trouble.

11. *Why is it important never to read meaningless syllables and unintelligible words?*

Because the pupil will read in future as he is taught to read; therefore, he ought to get accustomed from the beginning to seek in all that he reads a proper idea. Every thing not essential, particularly all that would embarrass the first instruction, should be put off to a later time. It is not necessary to proceed from the easier sounds to the more difficult, for the child pronounces all with equal facility; but it is good to begin with the easier letters, so far as their form is concerned, for example, o, i, s, f.

Reading by itself.

Reading may be divided into (1,) mechanical; (2,) logical, (intelligent,) and (3,) æsthetical, (feeling.)

12. *Are these grades strictly to be kept asunder?*

No; reading must never be merely mechanical, without regard to the understanding; with logical reading, mechanical ability ought at the same time to be advanced; nor should reading ever be without feeling; and with æsthetical reading, both the mechanical and the logical processes should be practiced. The first belongs, in a common school, to the lowest class; the second, (logical,) to the middle, and the third to the highest class, i. e., they are preëminently to be attended to in those classes.

13. *Wherein consists the mechanical ability of reading?*

In a quick survey of the written or printed matter, and in the ability of representing a row of letters by the right sounds, syllables and words.

14. *How is this ability best acquired?*

By frequent class-reading, which must alternate with single reading, so that the former is always preceded by the latter, which must serve as a model. Single words and sentences are to be repeated, until they are readily pronounced. The teacher, by his accompanying voice, directs as to right pronunciation and accentuation.

15. *Wherein consists logical reading?*

In that the understood contents of a piece are emphasized in conformity with that understanding.

16. *When does the pupil understand the contents?*

When he knows the meaning of the words, and the meaning of their relations in the sentences.

17. *When does he understand the meaning of the words?*

When he knows the signification of the derived and compound words by the meaning of their elements, and when he well distinguishes between the proper and the figurative meanings of the same.

18. *Should the exercises in the formation of words, and such as help to understand the rhetorical figures, be practiced in the reading lesson?*

They should be combined with grammar, and occur in the reading lesson *only so far as is necessary* for understanding the words.

19. *When does the pupil understand the relations within the sentence?*

When he knows how one conception (of a word) refers to another; the different conceptions (words) to the speaker; one idea to another; and the different ideas to the speaker. It is sufficient for the pupil to understand these relations without having a conscious insight into them. An analysis of the conceptions and expressions belongs to the grammar, not to the reading lesson, in order not to spoil the pupil's enjoyment of the contents, etc., etc. (The rest has more particular reference to the German language.)

III. ARITHMETIC, (*Rechen-Unterricht*,) BY A. DIESTERWEG.

1. *What has brought arithmetic into the common school?*

The wants of daily life—material necessity. Its introduction was historically the first of those which caused a change in the organization of schools. (Rabanus Maurus, in the ninth century, recommended arithmetic and geometry, because they open mysteries, because the Bible speaks of cyphering and measuring, because we learn by it to measure the ark of Noah, etc.)

2. *Is this the only reason why the present common school teachers retain this instruction, and consider it indispensably necessary?*

Not at all. They have recognized in the right treatment of number, and of its application to daily life, an excellent discipline of the mind; the formal object is added to the material one.

3. *How do they compare in value?*

The formal object has the preference; in no case is it to be subordinate; the development of the mental powers is in every school the chief point. But they do not exclude one another; quite the contrary. The formal end is attained just so far as the matter to be understood is worked through.

4. *What motives decide on the choice and arrangement of the matter?*

First, the "formal" motive; i. e., regard to the mental nature of the children, the laws of human development; and especial regard to the individual nature of the learner; next, various external circumstances—differences of place and time, and of schools. The first motive is universally the same; it dictates the *management* of the number; the second directs the *application* of the number, or calculation.

5. *How far ought all to advance in arithmetic?*

The maximum can not be stated; nor the minimum either, at least in regard to the degree of formal development. It remains to point out the material minimum, and this requires every child to be able to solve the common problems of every day life. It is neither necessary nor possible, that all scholars should reach the same point.

6. *What is to be thought of prescribed rules and formulas?*

They are to be entirely annihilated. No operation, not understood in its reasons, should be performed, or learned. The scholar must be able not to demonstrate mechanically each operation, but to give the simple reasons which justify it to the mind. The right deductions from the nature of the number and of its relations, are to prove its correctness.

7. *Wherewith must instruction in arithmetic begin?*

With the numbering of real objects, (cubes, little rods, fingers, etc.)

8. *What inductive means are next employed, and how long is their use continued?*

The teacher next proceeds to the use of artificial means, as lines, points, cyphering rods, Pestalozzian tables, etc., and continues to practice the simple changes of number with them, until the pupil has a perfectly clear idea of the numbers and of their quantities.

9. *What next?*

The teacher advances to the use of figures.

10. *What is the treatment of the number, with and without figures?*

The latter always precedes the former; the written or slate arithmetic every where follows mental arithmetic. Not only does the cultivating power of arithmetic lie in the insight into the relations of number, but also the wants of practical life demand preëminently skill in mental arithmetic.

11. *Upon what chiefly depends that skill?*

First on the ability in handling the decimal principle, (*Zehnergesetz;*) then on the ability to compare and analyze numbers.

12. *How do the exercises with so-called "pure," and with applied numbers, compare?*

The former always precede; application presumes ability in treating the pure number. This being attained, questions, problems and exercises follow; together with denominate numbers, and their application to life.

13. *Are the exercises with numbers from 1 to 100 to come in order after the four rules, (addition, subtraction, multiplication, division?)*

No. All operations ought to be performed successively with these numbers; the regulated uniformity of the operations comes later. (Grube, Schweitzer, etc.)

14. *Shall fractional arithmetic be entirely separated from instruction in whole numbers?*

No. No. 13 forbids it, and makes it impossible; even considered in itself it would be improper.

15. *Which points must be distinguished in practical problems?*

First, the understanding of the words.

Second, the relation of the question to the statement, or of the thing required to the thing given.

Third, the understanding of the way in which the unknown number depends on the number given.

Fourth, the finding of the unknown number from the given number; that is, the calculation, oral or written.

16. *What has the teacher to do in these four processes, when the pupil can not proceed of his own strength?*

In the first, the understanding of the words and things in their relations must be explained, and often directly given.

In the second, what is required must be well distinguished from what is given; the propriety of the question must be accurately considered.

The third point is to be brought out by means of questions from the teacher.

The fourth is an affair by itself, and is the pupil's concern.

An exercise is not complete and satisfactory, until the pupil is able to explain these four points, one after another, orally, and without any aid.

The teacher leads by questions, (by analysis;) the pupil proceeds by synthesis. The former proceeds from what is sought, the latter from what is given.

17. *How is talent for arithmetic to be recognized?*

Besides what has been said in No. 16,—by the independent invention of new methods of solving the problems, of peculiar processes, etc.

18. *In what way may uniformity in arithmetical instruction be gained?*

By solving each problem rationally, according to the peculiar nature of the numerical relations occurring in it, and consequently, without admitting any external rule or formula, which on the contrary ought to result from the subject itself. Uniformity lies in the rational, transparent treatment, and, therefore, in the mind, not in the form. Good rules, etc., are not indifferent, but they must follow the observation of the thing.

19. *Which is the most simple, natural and appropriate form of managing the problems externally?*

Not the doctrine of proportions; it is too artificial, and too difficult for the common school; nor the chain rule, etc. The best form in slate arithmetic for the common school is the so-called "*Zweisatz*," the fractional form, (*bruchform*,) which every where requires reflection. (Scholz.)

20. *What is the value of the so-called "proofs" and abbreviations?*

The proofs are, with a rational method, superfluous; the latter are of little value. A well guided pupil finds them out himself, and if, in the highest class, some of them are pointed out to him, their origin, and thus their correctness, must be demonstrated at the same time.*

IV. Geometry, (*Raumlehre*,) by A. Diesterweg.

1. *Is geometry required in the common school?*

No doubt, for it teaches the *forms* in which every thing appears; the shape of matter and the laws of those forms; the laws of space and of extent in space; the dependence of magnitudes and forms on each other.

2. *Why is such knowledge considered as a requisite for general cultivation?*

Because the whole mass of bodies, the universe, as well as man, exists in space; because without the knowledge of the qualities of space, man would be ignorant of that appearance of things which belong to their inmost nature; because geometry teaches how to measure lines, surfaces and bodies, which knowledge is very necessary; because without it man could not divine, that the distance and size of the sun, moon and stars, could be determined; and because he would even have no idea of the extent of his own abode, and of the mathematical, i. e., fundamental qualities of the same. All this is consequently requisite for general human cultivation, not to speak of its practical value, as well for female as male education, and therefore for the common school, the school of the people. Without it, not the most indispensable part, but an essential part, of education is wanting.

3. *What elements of geometry are to be taught in the common school? and in general what parts of it may be considered there?*

Space admits of "intuitive," (*anschauliche*,) and a demonstrative, (*begriffsmaessige*,) observation.

The intuitive faculty of man perceives immediately objects in space, bodies in their qualities and forms; with the sense of touch he perceives what opposes him in space, the body and its external form; the sense of sight assists him, by determining extent and distance, and by comparing and measuring them. These are operations of *external* intuition. The intellect abstracts the *differentia* of the bodies, and fixes the pure, mathematical form; and thus aids the *interior* pure, or mathematical intuition. Moreover, the logical intellect, perceiving the dependence of magnitudes on each other, their mutual conditions, the inference of the one from the other, deduces and concludes.

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* No school can do without an arithmetical text-book. Hence it sufficed to give here the principles. These contain the measure by which we have to judge of the value of the text-book.

The intuitive part of geometry is that elementary part which is proper for the common school. But thereby is not meant, that the pupils should not learn the dependence of one thing on the other; this even can not be avoided, it comes of itself; but according to the degree of ability, quicker and deeper with one than with another, and one school will make more progress in it than another. But the power to be immediately employed is the faculty of observing—first, the exterior, and then, and preëminently, the interior. The conclusions connected with that observation result therefrom spontaneously; the intellect works without being ordered. Therefore, in geometry, as every where—a fact, ignorance of which, causes much merely repetitious and lifeless teaching, as well as intellectual dependence and immaturity—the teacher ought to lead the scholar to immediate, true and vivid perceptions.

The strict or Euclidean geometry, with its artificial proofs, is not fit for the common school, nor does it prosper there.

4. *What is more particularly the subject of geometrical instruction in the peoples' school?*

The qualities of (mathematical) lines, surfaces and solids.

5. *What method is to be pursued with it?*

The point of starting is taken in the physical body; and from this the mathematical one is as it were distilled.

The order of single precepts or propositions is, as has been said, as much as possible *genetical.* Pedantry and anxiety are here, as every where, prejudicial. The method, always intuitive, requires originality, i. e., the evolving of every thing learned from some thing preceding; aims at immediate spontaneous understanding of one thing *through* the other.

6. *What is the immediate purpose of this instruction?*

To understand the qualities of lines, plains and bodies; to measure and calculate them.

7. *What instruments are used by the pupil?*

Pen and pencil, for drawing; compass and scales, for measuring; the usual measures of lines, surfaces and bodies, for calculating.

V. Natural History, by Ed. Hintze.

1. *What method should be used in teaching natural history?*

The method of instruction is the mental development of the pupil by means of the material development of the object. The method is, therefore, essentially a *process* made by the teacher. Since there can be but one such development, there can be but *one* method.

2. *Which is that true method?*

The one true method is named from the principle contained in it; it is the developing method.

3. *Wherein consists this developing method?*

In development there are three steps; observation, (*anschauung*,) conception, (*vorstellung*,) and generalization, (*begriff*.) Such is the progress of the method. Every where teaching begins with *facts*, and therefore in this case with the observation of natural objects. Of these, individual action and growth must be shown, and the general law of nature thence inferred. In this way and only in this, the pupil is taught according to nature, since he proceeds from immediate *bserving and knowing* to perceiving and understanding.

4. *What mode of teaching is to be used?*

That one which develops by questioning, (*die fragend-entwickeldnde.*)

5. *Is this mode practicable in all three courses, (set down by Hintze elsewhere with regard to the capability of the scholars)?*

In the first course, questioning is predominant; on the second, "*der vortrag,*" i. e., proper teaching and explaining must be joined with it; on the third again, questioning predominates. In all good instruction questioning is predominant, and with it conversation with the whole class.

6. *What have we to think of lecturing?*

Lecturing is no form of instruction at all; it is a rocking chair for teacher and pupils; the former has easy work, whilst the latter stare and dream.

7. *What ought to be required of the pupils?*

Their first and chief object must be to learn to *see* right; then follows right reproduction; and the necessary result is right understanding.

8. *What is the value of learning by heart?*

In all instruction nothing must occur which is not understood, and merely learnt by words. One fact well understood by observation, and well guided development, is worth a thousand times more than a thousand words and sentences learnt by heart without understanding. A well guided pupil has nothing to learn by heart particularly; what is understood, is remembered for life.

9. *Shall the pupil use a text-book?*

For natural history it is useless. The good teacher does not depend on it, the bad one has a good means to cover his inability, and the scholar has nothing but a dry skeleton.

The teacher must have mineralogical, botanical and zoölogical collections, and, if possible, a microscope.

10. *What must the pupil do at home?*

Write out and draw what has been treated in school—in proportion to his time—in a brief, concise and neat manner. Besides, the well directed pupil will voluntarily and eagerly occupy himself with nature, look with interest and intelligence at plants, stones, etc., and collect them.

11. *How does an able teacher distinguish himself in this study?*

The able teacher takes pains with his school every where, and particularly in this branch; all energy, punctuality and vivacity, must be applied here, if instruction is not to be a dead and dry mechanism.

12. *What distinguishes a painstaking (strebsamen) teacher?*

The able teacher is found out at school, the painstaking one at home. There are certain branches which are soon done with. But this is not the case with natural history; he who is devoted to it, must follow its own path of progress. The teacher must never cease to study, to make excursions, experiments, collections, etc., to search, to listen, to observe and investigate.

13. *What characterizes the inspiring (geistanregende) teacher?*

He is distinguished by a happy development of sound talents, love of study, and devotion to his vocation. By force of application every one may acquire the necessary knowledge, for nature is every where. If the able teacher shows himself at school, the painstaking teacher principally at home,—there flows from the inspiring teacher every where something that indeed can not be completely gained by study and application; but an earnest will accomplishes a great deal. Besides, it is true, that as under the hands of Midas every thing was changed into gold, so in the hands of an inspiring teacher every thing becomes enlivened. As the creative mind every where works attractively, so particularly in natural history, zeal, application, love and devotion, spring up spontaneously in the pupils.

VI. NATURAL PHILOSOPHY, BY A. DIESTERWEG.

1. *Should natural philosophy be studied in the common school?*

Certainly. Shall the children in the common school learn nothing of weather and wind, of thermometer and barometer, of the phenomena of light and air, of rain and snow, dew and hoar-frost, fog and clouds, lightning and thunder? shall they see the aëronaut, travel by steam, and read telegraphic news, without knowing the how and the why? Shall they remain ignorant of the constituents of food, and of the process of their stomachs and their lungs? Or is it sufficient to read of all this in the Reader? He who answers those questions in the affirmative, is either himself an ignoramus or a misanthrope, and he who affirms the last knows nothing of the way in which real knowledge is acquired.

2. *What do we begin with? and when does the proper instruction in natural philosophy commence?*

As every where, with showing single phenomena, with intuitive contemplation, with oral representation of what has been observed, and reflection thereupon.

We begin with it in the intuitional instruction of the lowest class. The instruction in geography and natural history develops further the faculty of intuition, and in the highest class the proper instruction in this branch commences.

3. *On what portions of natural philosophy are we to lay stress?*

On all such as belong to the knowledge of phenomena, within the pupil's sphere; the knowledge of the most common things is the chief point.

By this principle we make our choice; we omit, therefore, all that is remote, invisible, and incapable of being made visible; all that can be demonstrated only by mathematical proofs; and keep within the field of immediate observation, stops with those things which every one may know by observation and experience, and show such things, as are not obvious, by experiments with simple and cheap apparatus.

4. *What method is to be used?*

To say nothing of the regard for the individual quality of the pupil, the method depends on the nature of the subject, and on the way in which man naturally acquires his knowledge. Every where man is surrounded by natural phenomena; they happen before his eyes. These, therefore, must be opened, in order to observe apprehendingly, to remember what has been observed, to fix the succession of phenomena, and what is common in a series of similar ones; not only to learn the facts, but also the laws by which they happen, and finally, by reflection, to discover the hidden causes.

Natural philosophy belongs to the inductive sciences, i. e., to those which begin with the knowledge of single facts, abstract from them the law of the process, and then in inverse order, deduce the phenomena from the causes.

The way, therefore, prescribed by the nature, as well as the history of natural philosophy, is, that which proceeds from observation and experience to rule and law, if possible, advancing to the cause, (the so-called regressive method.)

5. *What is the aim of this instruction?*

The knowledge of the most essential phenomena, by which man is surrounded, and the ability to explain them, that is, to state in a simple way their causes.

Most important is the knowledge of all that refers to weather, and we expect, *therefore, from* a graduating pupil, correct answers to the following questions:

What is the temperature of the air in the different months of the year? Which is the maximum and minimum of heat in our country, and when do they usually occur? What is the corresponding state of temperature in other countries? What are its causes? How do the winds originate, where do they come from, and go to? What are the principal currents of air on the globe? Their causes? What weather is caused by the winds in our country? To which winds is our country chiefly exposed, and why? Origin of fogs and clouds? What is dampness? What causes rain? These and similar questions come so near home to man, that it would prove enormous dullness, if he did not ask them himself, and reflect, on answering them. No doubt that such stupidity is still frequent; but no one will doubt what is the indispensable duty of the common school in the premises.

VII. Astronomy, by A. Diesterweg.

1. *Is instruction about the nature of the universe about astronomy, expedient?*

Most certainly; we require the same from every man. To any one who does not admit that this is requisite, I address the following questions: Has that man an idea of the work of the Creator, and of his relation to both, who is ignorant of astronomy? or even, is he a man? No; he is like a brute confined to a narrow sphere, and has not even learned to make the right use of his upright stature, and of his sense for the universe, the eye; he has not enlarged his faculty of observing beyond the smallest compass, satisfied the inborn desire of knowledge, developed his intellect; he might be compared to a mole that closes its eyes to the light. We justly pity the poor man who has had no opportunity to learn the wonders of the starry sky; we despise him, if he has neglected an opportunity; we blame indignantly whatever would prevent his acquiring that sublime and elevating knowledge.

2. *What should every body know of the universe?*

He should know of infinite space, its laws, the qualities of the sun, the moon, and of our solar system, the relation of the planets to the sun, the position of the earth relatively to the same, its rotations and all that result therefrom, as years, seasons, day and night, in short, the substance of popular astronomy.

3. *How is the pupil to learn this?*

By observation—not by books; for from these we get empty words, hollow notions and phrases; books may at best assist the preceding instruction, but they can never replace it—ask among the "educated" people, what ideas they have in this respect, though they have heard of all and can talk of all. The true, vivid and moving ideas of the great subjects in question are exclusively acquired by an intuitive, developing instruction.

4. *What, therefore, is the teacher to do?*

He stimulates the pupil to observations; he makes him conscious of what has been observed, by illustrative questions and conversations; he draws his attention to the sublime phenomena of the sky by day and night; he talks over with him such observations as can be made daily all the year round on sun and stars; he fixes these observations in good order, and in clear, well defined propositions. This is the first step. Scientifically expressed, the pupil advances to the point of view—of what appears to the senses—of *spherical* astronomy.

This point being attained, consideratoly and firmly, (we must know first what *appears*, before we learn what *is*,) then reflection follows, whether the things really are such as they appear. The pupil advances from appearance to essence or nature. This step is very important, not only in astronomy, but in all things, and astronomy, for the very reason that it furnishes the clearest and greatest example of this important progress in human education, is of inestimable value. The pupil learns the nature of the things; his perceiving is raised to knowing. Disorder becomes order, variety uniformity, and chaos rule and law. *One* power reigns in the universe, every thing obeys his laws, and every where there results order, harmony, development, life; and each heavenly body becomes a part of the universe in its infinite sublimity and brightness.

It is worth while, not only to hear or to read of that, but to know and to understand it. The pupils now advance to *theoretic* and the *physical* astronomy.

At last there commences the construction of the whole, at least of our solar system, out of the centre. From the beginning, instruction proceeds from the periphery, from the point on which the pupil stands; the individual is himself the centre, around which every thing is grouped, and to which every thing is referred; the observation is *subjective*. Afterward, it is made *objective*, and man recognizes himself, the human race and the globe, as a part of the infinite universe.

5. *What has the teacher to attend to more particularly?*

This necessary instruction being still uncommon, we may give here several suggestions:

(*a*) He excludes every thing that can not be brought to sight.

(*b*) He goes always from observation and experience over to reflection and deduction. Astronomy is an inductive science; hence teaching follows the inductive method. The teacher does not "*dociren*," (teach or lecture,) he guides; he does not say one single sentence that could not be found by the pupils themseves; for such as can not be found by them—except historical notices—are not fit for them.

(*c*) He fixes the results in the most definite and pregnant expressions.

(*d*) He brings the things observed, thought, spoken of, to view on the blackboard, and directs the pupils to similar representations. But he does not begin with drawing, this is secondary to the finding of perceptions. He employs every where the pupil's imagination; astronomy is an excellent means to lead it on a sure and safe way. Drawing proves the correctness of the ideas, therefore it should not precede. If the pupil makes a correct drawing, it is the surest proof of his having viewed and reflected right.

(*e*) He abstains throughout from any use of models, (telluria, lunaria, etc.) They serve afterward as proof, but they may be entirely done without. Who uses them in the beginning, is wrong; who requires the pupils to transfer that which is represented by those models, to the universe, requires what is impossible: nobody succeeds. The value of models, even of the best, is very much confined. They show the apparent things better than the real; but even for the former they are not necessary. The teacher may sometimes, by means of a larger and smaller globe, a candle, etc., represent every thing needed. But the perception and representation of what is going on in space, even with shut eyes, is what is indispensable, because it is the principal thing. Whoever does not succeed so far, does not really know or understand.

He who wants to know more, may read my "Astronomical Geography," (*Astronomische Geographie,*) fifth edition, Berlin, 1855, 1½ thaler. (We may add, that this book of Diesterweg's is universally considered as a master-piece of method.—Ed.)

VIII. Geography. By Abbenrode.

1. *What are the principles on which the present methods of teaching geography are based?*

They are intimately connected with the general principles of education. Some consider it necessary to proceed from a general view of the globe, in order to gain at first a general outline,—a scaffold, by means of which the building may be gradually constructed in all its details,—and this in such a way that the pupil shall remain always conscious of the relation of the several parts to the whole, and that the latter itself shall gradually be made more and more perspicuous in all respects.

Others think that the beginner should first be led into a sphere commensurate with his faculties, near to him and capable of being surveyed by his bodily eye; and that he ought to be made familiar with it, in order to sharpen his sight and tongue for the later geographical perceptions, and the intellect for the relations more and more complicated. Then, and not before, the boundaries of this field should be gradually extended, to give his growing powers more extended exercise, until, at last, in the highest grade of his studies, the whole earth is considered in all its various relations.[*]

Others again are of opinion, that the mere observing, hearing and speaking of geographical matter, does not give thorough knowledge; that it is requisite to appeal to the spontaneous activity of the pupils themselves, and to cause them gradually to complete drawn or pictured representations of the localities studied. This method they say is not only in harmony with the juvenile inclination to such work, but gives an indelible knowledge of what is pictured, particularly of its relations of form and surface; which will serve as a solid basis for all further instruction.

On these three foundations rest the ideas of the geographical methods now in use,—the analytical, synthetical and constructive, (drawing,) method, each of which, in practice, admits of various modifications.

2. *What are the peculiar advantages and disadvantages of the analytical method?*

One advantage that should not be undervalued is, that it designedly keeps in view the connection of the several parts of the earth to the whole, so that, from the beginning, all discontinuance of the perceptions is avoided. It most carefully regards especially the topical and physical elements, as well as the necessity of graphic representation. It, however, has this peculiar disadvantage, that it forces upon the pupil the perception of the whole, at a time when he is not yet able to comprehend it fully; and, in particular, not to understand the general relations of climate, soil, produce, etc. It is impossible to carry the beginner along at once in all the collateral studies, *e. g.*, in natural knowledge, so as to thoroughly acquaint him with all these elements. Many things consequently remain an undigested mass, gathered and retained merely in the hope of future understanding.

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[*] Raumer, in his "*Contributions to Pedagogy,*" has a valuable chapter on teaching geography, which will be found entire in Barnard's "*American Journal of Education,*" Vol. VIII, p. 111—122. He guards teachers against the too frequent or extreme application of Rousseau's suggestions, that the walks of children should supply lessons for map-drawing in the school-room, lest the scholars begin to look on themselves as peripatetic lessons, and get a dislike to geographical reading and study. He advises the use of the map of the city or town in which scholars reside, as an introduction to the understanding of maps and even the globe. He advises that special attention should be paid to oceans, mountains, and rivers, as they help to fix the great facts of history; and of cities, as the most ancient monuments of men. Their sites seldom change; and, with few exceptions, the name of a city once great and flourishing never disappears from the earth or from human history. The poetic side of this study should be cultivated; and the reading of travels, and of the news of the day, and the transactions of commerce, should be associated with it.

3. *By whom has the analytical method been particularly recommended?*

The "philanthropist," Guts-Muths, has, in his "Essay on methodical instruction in geography," (*Versuch einer Methodik des geographisches Unterrichts*, 1845,) exclusively advocated the analytical method, which is also used almost exclusively in scientific works. (See Berghaus, Roon, Kalkstein, Rode, Barth, Viehoff, etc.) Some have attempted to lessen the inconvenience of analysis, by dividing the material into appropriate courses.

4. *In what respect has the synthetical method of teaching geography unquestionable value.*

In that, according to correct principles of pedagogy, a small and easily comprehensible space is treated at the outset; that the most "concrete" things, easily understood by the children, form the ground-work of further instruction: that these small districts or parts are by this method made vividly distinct wholes, the gradual extension of which, and its increasing variety, are well accommodated to the gradual development of the pupil's mind. The subjects and relations thus learned are at the same time the elements of all geographical instruction. Moreover, by this method the pupil gains, within a reasonable time, and in an orderly way, a desirable familiarity with his native place and country; and in case the extent of his studies has to be curtailed, the more remote parts of the globe would be omitted, rather than those with which the scholar and his life are closely connected, and which, therefore, must be most important to him. This method, likewise, admits of laying out definite courses. However, the strict and complete carrying out of it, would lead to an improper extension of the field to be gone through, and might, by tiresome repetition, cause other disadvantages.

5. *Who advocate the synthetical method?*

Charles Ritter, (see Guts-Muths, *Bibliothek;*) Henning, "Guide to methodical instruction in geography;" (*Leitfaden zu einem methodischen unterricht in der geographie*, 1812:) Harnisch, "Geography," (*Weltkunde;*) Diesterweg, "Introduction to methodical instruction in geography," (*Anleitung zu einem methodischen unterricht in der geographie;*) and Ziemann, "Geographical instruction in the burger schools. (*Geographische unterricht in Bürgerschulen*, 1833.)

6. *What is to be thought of a combination of these two methods?*

Strict consistency in either of them leads inevitably to many inconveniences. Therefore, we must either follow one in the main and make all kinds of exceptional uses of the other, or contrive to combine them judiciously. It is a great concession made to the synthetical method by the analytical, that the latter should permit, as introductory to the proper geographical course, a preliminary one, to include observation of the neighborhood and its objects; drawing easy sketches of the school-room, house, garden, etc.; instruction in measures of length and breadth, (if possible in the open air;) experiments in sketching the neighborhood from an elevated point, with estimates of area by eye, on a small scale, (for children of 7–8 years;) and geographical instruction on the native country, (province or state,) with an occasional exposition of the elementary geographical conceptions. Bormann, who tries to combine the best parts of the two methods, makes the first described preliminary course, (somewhat modified, and with the addition of observations of the most simple phenomena of the sky,) his *first* course; giving in the *second* a view of the globe, with instruction upon its principal imaginary lines, and the drawing of them, with a general view of Europe, and a particular one of Germany; advancing in the *third* course, to a more accurate description of Germany, followed by a view of the other European and extra-European countries. Such a combination may be considered as appropriate and practical; still it is not the only one possible.

7. *What are the advantages of the constructive, (drawing,) method?*

The drawing method proposes, by construction of maps, instruction in the elements of such construction, before all regular teaching, to furnish the basis and means of all geographical knowledge. It places especial value on the creative activity of the pupils; and upon such an impression of the pictures drawn, that this may be indelible and vivid in the pupil's mind, and form the foundation on which future geographical teaching shall rest. The accuracy and strictness, which this method gives in fixing and enlarging the forms is unquestionably very valuable, for very much depends on a thorough acquaintance with these forms. A designedly and gradual advance from the most general ground-forms to the more correct contours, and filling them out afterward with details of surface, is quite correspondent with pedagogical principles. This method, however, requires far too much in the way of accurate memory of numerous localities laid down. Geography contains still many other things of essential value, for which there would scarcely remain sufficient time and interest.

8. *How is this constructive method usually carried out in detail?*

Agren, general text-book, Part 1, Physical Geography, (*Allgemeines Lehrbuch: physische Erdbeschreibung,*) Berlin, 1832, would first have the maps of the two hemispheres drawn, on a planispherical projection. Some characteristic points, (capes, mouths of rivers, etc.,) are then to be fixed and joined by straight lines, to gain a sort of ground-plan of the area. The formation of the coast comes next, and afterward the parts of the surface are put in,—all by fixed and defined rules. This method, therefore, distinguishes between description of the coast and of the surface.

Kapp, "Course of Geographical Drawing," (*Lehrgang der Zeichnenden Erdkunde,*) Minden, 1837, takes the square form as a basis, and likewise assumes some characteristic points in the same, which he joins at first by straight lines, until successive corrections give the right representation.

Klöden rejects the gradual elaboration of the right map. According to him it must be drawn accurately from the very beginning by aid of some determining lines.

Canstein takes neither the whole geographical net of lines nor the form of a square; but any convenient geometrical figures, as triangles, rectangles, circles, etc., and uses but few meridians and parallel circles. He admits no copying, nor does he aim at strict accuracy in all determinations of boundaries and directions.

Lohse keeps to the normal directions of the rivers; has copies made from a given model-drawing, and requires a memory of what has been drawn.

Oppermann, "Guide to Geographical Instruction," (*Leitfaden zum geographischen unterricht,*) gives the pupils the right maps, ready made, in accurate contours, has these contours painted over in the succession in which the countries occur in the lessons, and then the details of the surface put in.

Klöden's method, (see above,) seems to be the best. On the plan of Bormann and Vogel, the pupils have skeleton maps, with the chief positions already marked, (see the maps of Vogel, Freihold, Holle, etc.,) and gradually draw the correct maps.

9. *To what limitations is the constructive method subject in the common schools?*

The drawing of maps, (by which must not be understood mechanical copying,) can not of course begin until the scholars have skill in drawing generally sufficient to construct a relatively correct map with some success. But geographical instruction itself can not be put off until that time; therefore, drawing maps can not be placed at the beginning, but must take its place in a higher grade. Again, unless geography is to occupy all the study and leisure time of the pupils with making neat maps, not entire atlases, but only a few maps, can be drawn, (that of the native province and country, of one or another country of Europe, of Palestine, etc.; but scarcely, with advantage, the two planispheres.) At school, there is not time to draw every thing, and if there were, it would be better used in other things, since map-drawing, an excellent aid to geographical instruction, is not that instruction itself.

10. *What is the proper introduction to teaching geography?*

It must be preceded by an acquaintance with the relations of space in the immediate neighborhood, and with the geographical objects there, as well as by an elementary knowledge of maps, and thus of elementary conceptions, for the sake of conversing on the same; else the pupil can not understand clearly nor advance successfully.

11. *What is the value of a preliminary course, (Vorcursus,) intended exclusively for explaining the fundamental conceptions?*

Those conceptions are indispensable; but to bring them all together in an especial course and to premise them to further instruction, is a pedagogical mistake, more inexcusable, in proportion as the course is more extended and abstract. In the same measure as instruction proceeds, the detail and quantity of accurate geographical notions may increase. But the beginning is sufficiently taken up by the first and most general of them, which are to be immediately applied. Excessive and premature expansion is injurious instead of useful. Much more is to be gained by actual observation of the elements of the neighboring landscape, with a view of frequent application afterward.

12. *What are the practical details requisite in geography?*

There is much to be observed, compared, understood, deduced, combined, impressed, represented. These, therefore, must be cared for, in teaching. The means of observation ought to be used in manifold ways, in order to gain the most correct image of the nature and life of the countries, and to illustrate and fix the same by all sorts of proper comparisons of the portions treated.

The teacher's statements should be clear, careful, stimulating, graphic, and definite; ought to leave the map only exceptionally; and should be adapted to fix the image in the pupil's mind. He must show how to draw conclusions from given natural conditions, to infer elements from given relations, to transfer the relations of the neighborhood to distant countries, and to combine partial notions into a whole. So far, the teacher's work is substantially that of communication. Mere reading, or uninterrupted talking, does not in the least accomplish the right work of geographical instruction.

The next important object is drilling, by a repeated review in the same order, or by an appropriate course over similar fields, by exhibiting sufficient representations of objects which can be impressed only mechanically, by imaginary travels with or without the map, by drawing maps from memory, by written answers to principal questions, etc. Hence, it follows that teaching geography requires manifold efforts, and that the teacher must be a good geographer and an able teacher, to be very successful.

13. *What position in geographical instruction is due to reading from the map?*

At present it is no longer sufficient, with text-book in hand, to merely point on the map, what is spoken of in the book,—situation and boundaries of countries, beds of rivers, chains of mountains, places of cities, etc. The teacher must know how to read maps, and to teach them; *i. e.*, not only to describe what figures and in what order and connection they stand on the map, but to translate the map, line by line, into the real world, in order that this be faithfully impressed in the mind, to be at any time reconstructed from it. He must understand the contents and meaning of the hieroglyphics of the map, and know how to exhibit them in an orderly and appropriate way, as we read a book. In reading a book, it does not suffice to find out the letters, to comprehend the single words and their conceptions, but the whole idea must be clearly understood and reproduced. The study of the map ought to render a great deal of the usual contents of the geographical text-books quite superfluous, that the pupil may not cling slavishly to the dead letters of the text-book, but may depend on the lively picture of a good map. (See Bormann and Sydow on reading maps.)

14. *What is the value of the "comparative method" of teaching geography?*

If the material were such that all parts of it should be learnt quite separately from each other, it would not be worth while to use this method; for the gain in mental cultivation would be small. But since numerous conditions are the same or similar in many countries, it is natural, even for externally facilitating the understanding, to try, by comparing them with those of other countries, to know the nature of both countries and the effect of those conditions on nature. Situation, boundary, size, elevation, watering, climate, produce, population, means of commerce and travel, etc., and many other subjects, are suitable for comparisons. The comparison itself is an excellent introduction to the object, induces more acute observations, memory, reflection, a sagacious detection of differences, and becomes thus an efficient means of cultivating the mind. It is this which makes geography a refreshing as well as scientific exercise of the mind; since the mastering of a more or less extended scientific apparatus is both a means and an end. However, even in a small sphere and at the first beginning, these comparisons may be used, and then, as the student's horizon gradually expands, they will become more various, attractive and instructive, and will preserve the mind from that fragmentary and mechanical learning, by which the end can not be attained.

15. *What success may be expected from geographical pictures?*

Maps are but symbols of real nature: they represent by a hieroglyphic type a number of natural elements for large territories, without being able to represent correctly the real objects of small areas. But, a well-designed and sufficiently copious collection of vivid and correct pictures, on an appropriate scale, well colored, containing mountains, valleys, plains, rivers, woods, prairies, fields, houses, bridges, ships, men, animals, etc.; or a choice collection representing the coöperating elements of nature in the most various places, in all zones, would be in a high degree instructive for the more advanced scholars. Then the eye might survey the whole landscape of natural and human life in its mutuality and connection, and would bring near the characteristics of the most distant countries; nearer than is possible by the most vivid description in words with the map only. For beginners, such pictures would be distracting; but, at an advanced period of instruction, nothing could be more useful. They would enliven the oral descriptions, and their impression would endure for life. With this conviction, some editors of maps, (see Vogel's Atlas,) have renewed the illustrations of maps, common in the middle of the past century, by no means merely for mere ornament, and have added marginal designs from the natural history of the world. Even in mathematico and physico-geographical maps, (see Berghaus' Physical Atlas,) this idea is made use of.

16. *What is the value of the so-called characteristic pictures,* (CHARACTERBILDER?)

It may be said, briefly, that the geographical *Characterbilder,* i. e., characteristic representations or descriptions of certain districts, afford a sensible view of the real life of nature, by developing, as upon a single characteristic locality of the globe, by the use of elements found elsewhere, with some modifications, the totality of this life in its various respects and relations. By a well-selected succession of such representations, the sections, as it were, of a picture of the whole earth, are given, and may afterward be joined into a whole. If they are written ably and sensibly, they have, besides their geographical importance, a great influence on æsthetic and linguistic education. It might be questioned whether near or distant countries are to be chosen, since the latter contain the greater number of unknown things; but practical teachers will prefer to begin with what lies nearest, and must, therefore, be most important for every one; as moreover this material contains enough to be learned by a beginner. (See Vogel's and Grube's "*Characterbilder.*")

17. *What position should be allowed to the geography of civilization,* (*culturgeographie?*)

It is not the earth, with its life, but man upon it, with his life, which is most interesting to man. The former interests us only on account of its intimate connection with the latter. To explain this connection is the difficult problem of "culture-geography;" which, for working out all the most different influences of life and nature into a transparent and ingenious whole, requires the highest degree of mental power, and has its place, if anywhere, only at the end of geographical instruction. Several movements of the human race must be discussed previously, and a satisfactory understanding of them is probably in all cases very doubtful with scholars who are not sufficiently prepared for it.

1. Guts-Muths, (*Versuch, &c.*) Weimar, 1845. See above, No. 3, analytical method.

18. *What works on methodic instruction in geography are particularly worth considering?*

2. Lüdde, "Methods in Geography," (*Die methodik der Erdkunde,*) Magdeburg, 1842. This is not confined to the wants of common schools, but gives academic instruction.

3 Zeune, "The three steps in Geography," (*Die drei stufen der erdkunde,*

Berlin, 1844, aims at laying the foundation of a strictly scientific instruction on the basis of a natural view of the earth, (in opposition to the historical;) which character also predominates in Zeune's *Gœa.*

4. Henning, "Guide to methodical instruction in geography," (*Leitfaden beim methodischen unterricht in der geographie,*) Iferten, 1812. See Pioneers of the synthetical method, No. 5.

5. Ziemann. See above, No. 5.

6. Görbrich, "Introduction to geographical instruction in common schools," (*Anleitung zum erdkundlichen Unterricht in der Volksschule,*) Wien, (Vienna,) 1853. A synthetical method; plain and clear.

7. Otto, "Universal method of geographical instruction," (*Allgemeine methodik des geographischen Unterrichts,*) Erfurt, 1839. Adheres to Guts-Muths, but uses the advantages of the synthetical method.

8. Agren. See above, No. 8; constructive method.

9. Kapp. See No. 8.

10. Canstein, "Attempt at a free delineation of the physical surface of the earth, by a simple method of construction," (*Anleitung, die physischen Erdräume mittelst einfacher Construction aus freier Hand zu entwerfen,*) Berlin, 1835. See No. 8.

See also, the introductions to Harnisch's "*Weltkunde,*" and Diesterweg's "*Rheinprovinzen;*" the essays in Mager's pedagogical "*Revue,*" 1840 and 1841; in the "*Schulblatt der provinz Brandenburg,*" 1847 and 1850; in Löw's pedagogical "*Monatschrift,*" 1847; in the programme of Bender's Institute, in Weinheim, 1850; in the General School Gazette of Darmstadt, 1845; (see *Finger,* "Instruction in the knowledge of the native country," (*Unterricht in der Heimathkunde,*) Leipzig, 1844;) in the pedagogical "*Jahresbericht,*" of Nacke I., III., V., VIII., 1846–53. A historical exposition of geographical methodology is found in Zeune's "Views of the Earth," (*Erdansichten,*) and a compilation of the "Latest views upon geography and their application to school instruction," (*Neuesten Ansichten von der Erdkunde und ihrer Anwendung auf den Schulunterricht,*) in Lichtenstern's book with that title.

19. *What books on mathematical geography are the best?*

1. Diesterweg, "Astronomical geography and popular knowledge of the Heavens," (*Astronomische geographie und populäre Himmelskunde,*) Berlin, 1855. 5 editions. The best of all.

2. Wiegand, "Principles of mathematical geography," (*Grundriss der mathematischen geographie,*) Halle, 1853. Practical and good.

3. Brettner, "Mathematical Geography," (*Mathematische geographie,*) Breslau, 1850. Quite practical and popular.

The chapters concerning mathematical geography are excellent in Raumer's "Manual of Universal Geography," (*Lehrbuch der allgemeinen geographie,*) Leipzig, 1848; in Roon's greater geographical work, "The earth, its races and states," (*Erd, Völker, und Staaten-kunde;*) and in Berghaus' "Rudiments of Geography, in five books," (*Grundriss der geographie in fünf Büchern,*) Breslau, 1840.

Of books on popular astronomy, very good ones are Kaiser's "Starry Heavens," (*Sternenhimmel,*) very clear; Littrow's "Wonders of the Heavens," (*Wunder des Himmels;*) Stern's "Knowledge of the Heavens," (*Himmelskunde;*) Schulze's Astronomy; Mädler's Popular Astronomy; Hartmann's Urania; and Airy's and Brande's Lectures on Astronomy.

20. *What books on physical geography may be recommended?*

Berghaus, Roon, Raumer, Rougemont, Kalkstein, Guyot, Guts-Muths, Ewald, Somerville, Reuschle, K. V. Hoffmann, W. Hoffmann, Schouw; besides, the "*Characterbilder*" of Grube and Vogel, and shorter works by Viehoff, Cornelius, Ball, Buff, Atzerodt, Gambihler, Gude, etc.

21 *What text-books on political geography are the most popular?*

The number of politico-statistical geographies is enormous. As most prominent, we may name those of Völter, Roon, Schacht; as very common, those of Bormann, Daniel, Selten, Voigt, Volger, Seydlitz, K. A. Hoffmann, Zachariæ, Stein-Hörschelmann; as shorter ones, those of Lüben, Stahlberg, Möbus, Ohlert, Petersen; as very good, those of Rhode and Barth; as larger ones, those of Ungewitter, Blanc, Wappaens, W. Hoffmann, etc.

The new discoveries are found in Froriep's "Almanac," (*Jahrbuch*;) in Berghaus' *Jahrbuch*; in *Lüdde's* "Gazette of Geography," (*Zeitschrift für Erdkunde*;) in Gumprecht's *Zeitschrift*; in Petermann's "Contributions," "Mittheilungen."

22. *What works are there upon Geography of the native country?*

Not so many as might be expected. For the geography of Prussia, Schneider, Schmidt, Uvermann, Vossnack, Natzmer; for that of Germany, Guts-Muths, Hoffmann, Winderlich, Billig, Curtmann, Vogel, Duller, etc.

23. *Which maps are the best?*

The wall-maps, (*wandkarten*,) of Sydow, Roost, K. V. Hoffmann, Stülpnagel, Grimm, Holle, Winkelmann, etc.; the hand and school-maps of Sydow, Berghaus, R. and Th. Lichtenstern, Völter, Stieler, Bauerkeller, Grimm, Kiepert, Kutscheit, Winkelmann, Roost, Glaser, Wagner, Platt, Holle, Voigt, Gross, Vogel, Schuberth. For physical geography, Berghaus' *Physical Hand Atlas*, and his *Schulatlas*, are classical; and Bromme's Atlas, to Humboldt's Kosmos, very good.*

IX. HISTORY. BY ABBENRODE.

1. *What are the material conditions requisite to make history an important means of mental cultivation?*

The material ought to be selected with reference to the intellectual standing and wants of the pupil, to be formed into a well-systematized whole, and to be so used in teaching that, by its vividness and truth, as well as by its attractiveness for the juvenile mind, it may arouse and strengthen, improve morally, prepare the pupil worthily for practical life, and nourish in him a Christian spirit. Of course, the character of the nation to which the pupil belongs, is prominently to be considered.

2. *What personal conditions influence the cultivating power of the study of history?*

As the totality of the pupil's individuality requires, in historical construction, great regard, and as very much depends on the tact with which his mental powers are nourished, so the effect of history on his mind depends even more on the ability and character of the teacher. Unless he possesses, together with the requisite external skill, a sufficient knowledge of history, true piety, and a

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NOTE. Especial reviews of a long number of books and maps are in Nacke's "Educational Annual," (*Pedagog. Jahresbericht.*) I., III., V., VII., and in Klöden's review of modern maps in the 'School Gazette of Brandenburg," (*Schulblatt des provinz Brandenburg*,) 1845 and 1846.

noble heart; and unless, besides being a man of veracity, he has acquired conscientious impartiality and the circumspect calmness of a clear judgment, he can not hope that his pupils will experience the cultivating power of history.

3. *What are the leading characteristics of the proper material?*

The most essential of these materials are, a, the political, under certain modifications, particularly that of the native country; b, history of civilization, under some limitations; particularly, that of the Christian church. Though the material chosen under either of these heads may be throughout kept asunder, and, in fact, has been so very often in historical works, yet an appropriate combination of the two for construction must be recommended, since they supplement one another usefully, and, in practice, admit quite well of this mutual compensation. Our German youth need, above all, the history of Germany, and where there is occasion, the attention should be fixed on the ecclesiastical, scientific, and artistical development, as well as on the formation of the character and manners of the nations. Which of the two sides, and in what proportion, is to predominate, depends on the particular wants of the pupils: still the history of the church is of especial value.

4. *What are the principles of teaching history in school?*

Historical instruction requires in all cases a narrative form. In proportion to age and ability, the narrative will have the character either of biography and monography, or will represent, in chronological order, definite groups of historical facts in their interior connection; without any exaltation of the authors of the events very high above the common level of life. In either case the teacher may choose an ethnographical, or a synchronistical order. The pragmatical method, right and important in itself, has in most cases at school, an unsatisfactory result, even in higher schools; since even the well-prepared students of the gymnasia, (colleges,) want the maturity of life which must aid the pragmatical understanding. Finally, the method of universal history is quite unsuitable to schools.

5. *How have those principles been practically used and expressed hitherto?*

History has been, from the most ancient times, written and taught in all forms. It has been a monumental narrative of the exploits of whole nations and privileged individuals. Each ancient people has, out of a certain necessity, written and taught its own history,—some classically,—for all time. Besides, modern nations have taken hold of the history of other countries, particularly of old Greece and Rome, and reflected them in the mirror of their own perception; they have created the representation of a history of the world,—general history. This has led to teaching general history, either connected with that of the church or separate from it. The almost exclusively "scientific" method of treating the same in writing and teaching made it suitable only for such as wanted a "scientific," (collegiate, etc.,) education. Others neither could nor should learn it. But, since a common inclination to acquire historical knowledge has sprung up, in consequence of a more general education in better schools, it suffices no longer to confine this instruction to the disciples of science, nor to satisfy with general notices from history. The people, even in the lowest classes, will—and should—partake of it. This has led to manifold and successful attempts to find a suitable way of treating history, and to give the common school a share in its profits.

Several popular and practical methods of teaching history have arisen, which, though differing in many respects, agree very much in their fundamental ideas.

These methods may be distinguished first, as being chiefly restricted, the one to *biographical* and monographical narrations, the other to the *natural* and *temporal connection* of historical events. In the former case the chief persons and events to be spoken of are at first arranged by beginning from modern times and proceeding in a *retrograde order* to certain primary epochs, in order to review the whole afterward, from these points, more thoroughly, by descending in the natural order of time. Or, the most important phases of the development of national and political life are made the centres of an arrangement, by groups, which treats the facts and persons that are the types of that development, through all time, in definite periods, and only occasional side-looks are cast on cotemporaneous events.

In the other case, either the historical material is arranged in chronological order, and divided, according to its nature in the different ages, amongst single nations, (ethnographically,) from their rise till their fall; or, all nations are treated side by side at the same time, in periods, (synchronistically,) in order, on arriving at each new epoch, to gain a general view of the development of the whole human race.

In both cases it is either the history of the native country or the general history of civilization, or that of the Christian church, by which the point of view is regulated, and on which the chief stress is laid.

6. *What are the advantages of the biographical method?*

As long as it is of consequence to arouse the historical sense of beginners, and while these are not so far advanced as to understand the general state of a nation, since their interest for individuals preponderates, so long it is quite natural and profitable to join all history substantially with the biography of the representative chief men, at the same time with which the outlines of the chief events may be surveyed. Even at a later stage, the biographical element has a high value, since it may give, along with narratives of individual experience, especial relations of the general development of events, such as facilitate their understanding and enlarge knowledge at the same time. Even the hidden motives of facts are not laid open to the historian, until he has looked sharply into the particular life of the leading and coöperating individuals, who either receive or help to give the character of their time. We may add the general human interest excited by personal experiences of life, and the moral influence exerted on susceptible minds. Dry generalities and outlines can of course never excite such a lively interest as good biographical narrations.

7. *What are the objections to the exclusive use of the biographical method?*

A mere succession of separate biographies will never show the real course of the general development of history; they are, even the best, mere fragments and portions, but not history itself in its inner moral connection. Moreover, the description of the outward life of historical persons, as sufficient for beginners, is indeed generally not difficult; yet it is so, in a high degree, to enter into their inner life and character, whence all their actions originate. It presupposes so much knowledge of the human mind, so much self-denial and impartiality, requires such an expanded and detailed knowledge of the material for understanding motives, that it is as rare to find good biographies, as it is rare to find those conditions combined in one man. The usual biographies swarm with generalities and partial judgments.

8. *What is the value of the regressive method?*

Strictly speaking, the regressive method is the preferable one for historical research. Facing the events, it inquires into their immediate causes, and goes back to the remoter ones, in order to reconstruct philosophically the history which has been developed according to a higher and divine plan. So far as the method of research is to be represented by the method of teaching,—as it sometimes has been required,—the regressive proceeding is correct; besides, it is formally practicable without difficulty. But it is contrary to the process of historical narration, and begins almost necessarily from characters and epochs of modern times, by far too complicated for beginners, and such as to prevent usually the combination of truth with popularity. Besides, this method could be applied only at the beginning, and would soon necessarily pass over into the chronological one.

9. *How far is the chronological method valuable?*

The historical events develop themselves in time; the natural course of the latter is, therefore, both back-ground and frame of the former, since it constitutes the thread of the narration. Time facilitates comprehension, remembrance, and comparison of historical movements; it marks best the sections and epochs of development, favors thus the rudiments of historical instruction, and, in general, is indispensable. History may be treated in the one or the other way, with beginners, or with advanced scholars; but the succession of time must be necessarily cared for.

10 *Under what circumstances is the ethnographical method suitable?*

After the primary course, which lays the foundation, (biographical and monographical,) has been finished, and a second one has led nearer the more general connection of the chief movements in history, then it may be useful to pursue the history of the prominent modern nations, ethnographically, from their first rise until their present state. In ancient history it is a matter of course to proceed chiefly in the ethnographical way, because those nations have led for a long time a separate life, and after a victorious conflict with neighboring nations have merged them in their own life.

11. *What are the difficulties of the grouping method?*

The idea of pursuing material similar, by interior connection, through all centuries, and of joining it into a whole, is in itself well enough. But, on the part of the teacher it requires an unusual knowledge of particulars in the development of nations; and, on the other hand, the problem is too hard for the juvenile mind. It may be, that many things can be omitted, or at least treated separately as a matter of secondary interest; but, it is questionable whether they would be advantageous with reference to the whole. Besides, the hard problem must be solved of connecting finally the single parts of development into a totality.

This method, even for the especial history of a nation, the German for instance, is attended with great difficulties, but these would increase, if it should be applied to all other civilized nations. For, by its nature, it lays the chief stress on the development of civilization, and displays but on such points the characteristic picture more fully, when it is desirable, from a national and patriotic point of view. The entire plan, so far as I know, has not yet been practically carried through.

12. *When has the synchronistical method its right place?*

Synchronism is not suitable for beginners. It requires an advanced standing, to view the contents of entire periods of the development of nations, and understandingly to pursue the gradual progress in it. To whoever is not able to survey that progress in its degrees, and, when arrived at a remarkably high point, to bring afterward the different conditions of other nations to view, interweaving them with the former picture, and thus to compose a totality of those intermixed developments, to him a synchronistical treatment of history remains sterile. Therefore, scarcely even the pupils of the first class, in our higher seminaries of learning, can be considered as sufficiently prepared for it.

13. *Who has recommended the biographical method?*

It may be said the entire modern school has unanimously recognized it as the best and most suitable for beginners. For this grade, nearly all modern methodic histories contain only such material as is fit for biographical instruction. In higher schools, a biographical course has been arranged in the lowest classes, and approved everywhere by the authorities.

14. *Who has recommended the regressive method?*

Dr. Kapp, in his general work, "Scientific school instruction as a whole," (*der wissenschaftliche Schulunterricht als ein Ganzes,*) Hamm, 1834, is one of the first. Dr. Jacobi has recommended it, especially for the history of the native country, "Outlines of a new method, &c.," (*Grundzüge einer neuen methode, etc.,*) Nürnberg, 1839.

15. *What is the origin of the chronological method?*

From time immemorial scarcely any other method has been used in Germany than this; now joining synchronism, now following the ethnographical principle. Until this hour it prevails in the majority of schools, of classical histories, and of text-books on history. It has been modified by many competent historians and teachers, for the various purposes of elementary, burgher, and real schools, and gymnasia. Some introduce it by mythology, others by a biographical course. Some give the first place to ancient history, others to national history; others, again, attempt to suit the various wants, by a particular partition of the material, by all sorts of principles of treatment, by accommodation to the different stages of life, or by raising certain historical pictures, (*characterbilder,*) above the general course of history.

16. *Who has tried to introduce the grouping method?*

Stiehl, (now privy-counselor,) has proposed, in a little book, "Instruction in the history of our country in the elementary schools," (*Der vaterländische Geschichtsunterricht in unsern Elementarschulen,*) Coblenz, 1842, to promote instruction in the history of the fatherland by a vivid transfer into the midst of national life, by historical facts grouped around a national calendar, with the exclusion of systematic chronology, and by presenting the coherent material well-wrought together in one mould; besides, making the whole more fruitful by commmunicating important patriotic documents and like best patriotic songs.

In a different way, Dr. Haupt, in the preface to his "History of the World, on Pestalozzi's principles," (*Weltgeschichte nach Pestalozzi's grundsätzen, etc.,*) Hildburghausen, 1841, recommends a grouping of the entire history after certain categories of the material, (home, society, state, nation, religion, science, and art,) in each of which the suitable material of all time is comparatively placed beside each other.

17. *What are the most recent tendencies concerning historical instruction?*

On the one hand, it is recommended to interweave classical sentences and good historical poems, in order to vivify historical instruction by dramatizing it, and so impress better the chief epochs, especially of natural history, by story and song. On the other hand, for the sake of concentration, various combinations with geography, natural knowledge and religion, and even with the hymn book, are recommended. An endeavor has also been made, to simplify the material for common wants, by cutting off the less fertile portions, particularly of national history, and to compensate for this by entering deeper into some chief characters and events. This has fixed attention more and more on historical *characterbilder*, which are now in various works, at the teacher's command, to be used chiefly for a good Christian and national education. Particularly, it is endeavored to view more closely the civilization of nations, especially of one's own; to give more Christian and dogmatic matter; to introduce the youth rather more into the historical development of the social orders and classes than into the history of the world; and to find one's own account in the execution. For each of these tendencies, respectable voices have been heard.

18. *What is to be thought of these tendencies?*

It is a pedagogical mistake to do too many things at once. The teacher of history must abstain from teaching at the same time catechism and natural sciences; they do not belong to history. Further, the hymn book can not be considered as a suitable guide for instruction in national history, to say nothing of the obscure origin of many songs in it. To interweave many sayings of a celebrated man, even to make it sometimes the centre of the narration, may be quite suitable. It may be very effective to celebrate a great hero or event of history, besides elevating and improving description by a good song also. But, more important is it to simplify, and to enter deeply into the chief points, and therewith to nourish earnestly a patriotic and religious sense,—which may, no doubt, be much aided by good national "*characterbilder*." A prominent regard for the orders of society is not only difficult but even not without danger. To save better care than hitherto of the progress of civilization, and to avoid subjective tendencies, particularly in modern history, will be approved by all sensible persons.

19. *How far is geography to be cared for in teaching history?*

Up to the present time, all attempts to combine, after a definite plan, all historical with all geographical instruction, have nearly failed. The common way in which it is done now, is either to premise to the history of the various nations and states the related geographical matter, or occasionally to insert it in fragments. In this way, of course, geography has not its degree; because for many geographical objects there are no points of reference and connection. Further, it would be necessary to explain at every time only the corresponding geography of that period, so that a comparison with the geography of the present time would be needed,—a necessity that has always great difficulties for young people. The plan by which certain geographical sections alternate with historical ones, (the former analytically, the latter chronologically,) no one would consider as a praiseworthy combination. In whatever way it is done, it is indispensable to make the geographical field of history as clear as possible. Instruction in history can neither be tied to a specific plan of teaching geography, nor can it aim at an appropriate and complete finishing of the latter. The same is true vice versa.

20. *What is the value of historical poetry in teaching history?*

So far as historical poetry keeps within the sanctuary of truth, its artistical glorification of characters and deeds is unquestionably of high value, and the appropriate use of it can not be too much recommended. But, as soon as it leaves truth, and idealizes, poetically, the historical persons and their exploits, it is no longer of importance for instruction, even if the poems be of great poetical value.

21. *Why are the historical dates so valuable?*

It may be asserted, without hesitation, that, without fixing the dates, instruction and a ready knowledge of history is impossible. As long as the pupil is not yet conscious of the distinction of time in its practical worth, the general outlines of the historical event may be sufficient; but, as soon as that consciousness is awake, the event and person must be connected with the date, in order that the former may be better remembered, better understood in its position of time, and better distinguished from related phenomena. The dates are the most simple monitors of memory, and can never be entirely omitted, though they ought to be limited for children, and sometimes to be made round numbers, for the sake of memory. They help to regulate the material in the easiest way, and join the natural development of events; nay, a sensible arrangement of them often aids the understanding of related events better than long expositions could do.

22. *What is the didactic value of good historical pictures, maps and tables?*

In teaching, very much depends on making history intuitive and lively. It is, therefore, desirable to aid the oral address by appropriate means. Such are historical pictures and tableaux, since they represent often the historical action more clearly in one moment than the most copious description by words. Of course, they must be true and of artistical worth. Historical maps aid best the perception of the geographical extent of a historical transaction, and often afford the most natural representation of its results upon the position of nations and states to one another on the globe. Tables facilitate both a short review of the chief events in chronological and synchronistical order, and a firmer impression on the memory, by bringing to view the rise, fusion, separation, and falling of nations, etc. Also they can best represent, in side columns, the different movements of development at the same time in state, church, science, and art.

23. *In what respects does private reading further historical knowledge?*

Since it is impossible to treat in school every thing desirable for youth, it is very important that appropriate reading in private should assist to complete the historical knowledge. It is indispensable for a more detailed familiarity with the chief characters and events of the world or the country. Fortunately, the desire to read history is as natural as it is common among youth; and, even to a more advanced age, there is no better occupation, in leisure time, than historical reading.

24. *What books treat upon the methods of teaching history?*

a. Peter, "Historical Instruction in the Gymnasia," (*Der Geschichtsunterricht auf Gymnasien,*) Halle, 1849.

b. Loebell, "Outlines of a method for teaching History in the Gymnasia," (*Grundzüge einer Methodik des Geschichtsunterrichts auf den Gymnasien,*) Leipzig, 1847. This work suggests a careful partition of the material.

c. Miguel, "Contributions to the study of Biography in the Gymnasia," (*Beiträge zur Lehre vom Biographische unterricht auf Gymnasien,*) Aurich, 1847.

d. C. A. Müller, "Historical Instruction in the Schools," (*Über den Geschichtsunterricht auf Schulen,*) Dresden, 1835. A very thorough treatise, recommending. among other things, the biographical method.

e. Arnold, "On the Idea, Actuality, &c., of History," (*Über die Idee, das Wesen, etc., der Geschichte,*) Koenigsberg, i. n., 1847. (See the history of the world.)

f. Assmann, "The Study of History," (*Das Studium der Geschichte,*) Brunswick, 1849, recommends beginning with myths and chronological reviews.

g. G. Weber, "Historical Instruction in the Schools," (*Der Geschichtsunterricht auf Schulen,*) Heidelberg, 1850, contains very good hints for gymnasia, real and common schools, etc., etc. Besides the prefaces to many text-books, etc., we may mention Diesterweg's "Rhine Gazette," (*Rheinische Blätter,*) of 1835, 1840, 1842; General School Gazette of Darmstadt, of 1834, 1841, 1843, 1848; Mager's Pedagogical Review, of 1841, 1845, 1851, 1853, and 1854; the *Schulblatt des provinz Brandenburg,* 1851, 1852; Löw's Pedagogical Monthly Review, 1848, 1853, etc. Also, Diesterweg's, "Directory," (*Wegweiser,*) II.; and Nacke, *Pedagogisches Jahresbericht,* I., III., V., VII., etc.

25—40. Books and Maps. (On methods, see No. 24.) Text-book on Prussian History, Löschke, (the best.)

For private reading: Zimmermann, "History of Hohenzollern," (*Geschichte der Hohenzollern;*) Reiche, "The former times of Prussia," (*Preussen's Vorzeit;*) Kloss, etc.

Collection of patriotic poems: Müller & Kletke, Berg, etc.

Short text-books on German History: Asmus, Kohlrausch, Eder, Böttiger, Grobe, and Dittmar. (The last is the best.)

Larger Histories of Germany: Pfister, K. A. Menzel, W. Menzel, Luden, Ranke, Raumer, Bülau, Lochner, Wietersheim, etc., etc.

For private reading on German History: Ramshorn, Niemeyer, (Deutscher Plutarch,) Henning, Wolff, (Germania,) Vogel, (Germania,) etc.

Collection of historical poems on German History: Wagner, A. Müller, H. Kletke, A. W. Grube, Zimmermann, A. Böttger, etc.

Text-books on General History: a. short, Dittmar, (the best;) b. larger, Leo, Wachler, Arndt, Ellendt, Dittmar, Wachsmuth, Schlosser, Dietsch, etc. (All of them used only in gymnasia and real schools.

Popular histories, with much material for biographical instruction: Böttger, Schwartz, A. W. Grube, (*Characterbilder,*) Vogel, (*Geschichtsbilder,*) Becker, etc.

Classical Histories, partly on single periods: Schlosser, (the 18th century,) Raumer, (Hohenstaufen,) Eichhorn, Luden, Heeren & Ukert, Leo, Rehm, Wilken, (Crusades,) Bredow, Niebuhr, (Rome,) Ranke, (Popes and Reformation,) Dunker, Peter, O. Müller, (Greece,) Poelitz, W. Menzel, Arndt, Dahlmann, Wachsmuth, etc.

For private reading on General History: Schwab, "Ancient History," (*Sagen des Alterthums;*) Lange, "Histories from Herodotus," (*Geschichten aus Herodot;*) Niebuhr, "Heroic History of Greece," (*Griechische Heroengeschichte;*) Homberg, "Biographies of celebrated Greeks," (*Biographien berhümter Griechen,*) etc.

For well educated readers: Kletke, "Antiquity in its chief movements," (*Das Alterthum in seinen Hauptmomenten.*) (Excellent.)

Historical Tables, very simple: Wander, Bredow, Schäfer, Dielitz, Püty, K. Th. Wagner, Peter; larger, Kohlrausch, Pischon, Lochner.

Historical Maps: a. small, Schaarschmidt, Muhlert, Rodowicz, König, etc. b. Larger, Wedell, Spuner; (Best and classical.) c. For the wall, (*Wandkarten,*) Vogel, (Europe;) Bretschneider, (Europe;) Hoffmann, (ancient world;) Holle, Kiepert, (ancient times.)

Historical Pictures: Dethier, *Historisch-chronologische Gallerie;* a collection of 1500 medallions. Gross, "History of the World in Pictures," (*Weltgeschichte in bildern.*) The very best on German history is K. H. Hermann's *Geschichte des Deutschen Volks,* (History of the German Nation,) in 15 pictures.

XV. INSTRUCTION IN SINGING.

BY DR. E. HENTSCHEL.

(Translated for this Journal from Diesterweg's "*Wegweiser*.")

I. DEFINITIONS.

By singing we understand the production of the beautiful, as accomplished by the human voice, by means of the union of musical tones with poetical words; the union of music and poetry.

The elements of speech are sounds; of music, tones. From sounds are formed syllables, words, sentences, periods; from tones, 1, in succession, melodies, which consist of phrases and periods; and 2, in combination, harmonies or chords. Every succession of tones, and of combinations of tones, whether of single tones or those consisting of several tones together, (chords,) may be considered in three respects.

1. Height or lowness, or melodically. This department is called Melody.
2. Length or shortness, or rhythmically. This department is called Rhythm.
3. Loudness or softness, or dynamically. This department is called Dynamics.

The relation of tones to each other with respect to their simultaneous sound, is the harmonic relation; and the study of them is called Harmony.

The distinctions between the various kinds of singing, such as the church, solo, choral, &c., are understood by every one. Either solo or choir singing may be in unison or in harmony. A mixed choir is one in which there are women's or boys' voices as well as men's.

Singing, as a development of the beautiful, is an expression or representation of the feelings. The beautiful is within the singer or subject, as the occasion of his feelings; and it appears also as the object of feelings, through the medium of poetry and music.

Several of the faculties are exerted in singing. The singer is concerned, first, with words. These he must learn (unless in the case where he composes them himself, which is not considered here), remember and reproduce. In learning and understanding the words, their logical and poetical natures are to be considered; and use is made of the understanding, the memory, the imagination, the fancy, and the sense of beauty. And in reproducing these words, besides the above faculties, the voice is employed.

Secondly, the singer is concerned with musical tones. And these also he must learn, (except in the case, not here considered, where he himself composes them), remember and reproduce. In learning these tones, he must, firstly, consider them with exclusive reference to their melodic, rhythmical, dynamic, and harmonic character, and secondly with reference to their inner or æsthetic character, through which they exemplify the beautiful. The former of these two is accomplished by the musical faculties; the latter, by the fancy and the sense of beauty.

The musical faculties include the musical memory, and the powers of apprehending and of reproducing sounds—usually termed the ear; and also the rhythmical faculty, or faculty of time; as well as that which appreciates the degree of loudness of sounds. The power of apprehending sounds, if developed to the point of intuition of sounds, presupposes a systematic knowledge of sounds, which requires the exercise of the numbering and reckoning faculties, as well as of the memory. In order to the comprehension of tones from the written marks, or notes, which indicate them, is required, besides the musical faculties, a system of notation; which is an affair of the understanding and the memory. And to produce the tones thus indicated, the voice is necessary.

Singing represents feeling; sometimes a feeling which indicates a condition which is not in any proper sense that of the singer, and can perhaps never be so. This is the case for instance, almost always in oratorio, in opera, in ballads and romances, and in singing war-songs, hunting-songs, sea-songs, and many others. But the singing is intended to give pleasure; artistic pleasure; and of this there are different kinds and degrees; the highest being that where the reflective faculties are quiescent, and we are transferred so wholly into a foreign condition of feeling, that we are wholly carried out of ourselves; and every feeling that speaks in the music, whether of grief or joy, becomes entirely our own. This is most easily the case with children, who are always more poetical than adults. Jean Paul says, "Singing imparts to children something of the enjoyment of heaven; for they have not yet lost any of their rights to it."

Men also find in singing an inexhaustible fountain of the noblest pleasure,* which no one is forbidden to enjoy. The delights of this art are in nowise confined to the saloons of the rich and great; its pleasures and beauties will abide in the most lowly room, under the humblest roof, if the occupants only know how to introduce them there.

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* "The most joyous of joys, music."—*Klopstock.*

Singing also produces an artistic transfer of the consciousness, not as it were into a foreign condition of life, but into an excitement of a sort at first strange, but which becomes natural through the influence of the singing. Thus a cheerful song enlivens the sad; a spirited one refreshes the weary; and a devotional one gathers together the thoughts, all distracted by the incessant impulses of outward occupations, and elevates them to God. In such cases as these, there obviously takes place not only a mere transitory pleasure, but often a profound and permanent influence upon the whole inner man.*

In other circumstances, again, no stimulus, no excitement of the sensibilities is necessary; the heart itself is "full of a thousand feelings," and they overflow in song. A victorious army sings a *Te Deum*; the mournful choir laments the fallen; a rich harvest blessing opens the lips in joyful hymns; friends departing to distant lands mournfully sing a departing song; a Christian congregation joyously shouts its inspiriting hosanna to the Lord; an anguished and stricken heart cries out of the depths, in lowly penitence. Song is the language of the feelings; and human nature is under a profound necessity to speak in this language. This is proved, not only by the story of "John the Soap-boiler,"* but by the history of all times and people, and especially by that of Christianity.†

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* A remarkable instance of this nature is related in Schubert's "*History of the Soul*," of the preacher Kühze of Berlin, who was freed, by listening to a devotional song, from an agonizing fear of an apparently necessary operation upon his eye; a result which also had such a favorable influence upon the eye, that the operation was found unnecessary.

"And I can testify," says Luther, "which also experience demonstrates, that after the holy word of God, nothing is so good, and so highly to be praised and famed, as music; and that for the reason that it is a controller of all the movements of the human heart, and has such a power over it, that men are often governed and overcome by it, as by a master."

Acoustics, so far as I know, does not yet account for the fact that we feel pleasure in hearing chords, and displeasure at discords. We know that musical tones are produced by regular atmospheric vibrations, and that all vibrations of aliquot parts chord. If two or more tones sound together, either the atmospheric waves coincide and strengthen each other, or they obstruct and destroy each other. These promotions or obstructions evidently communicate themselves through the ear to the nervous system and the mind, in one case in a manner promoting their natural action, and therefore pleasant; in the other, in a manner obstructing it, and therefore unpleasant. The first of these two kinds of impressions we call a consonance or chord, the latter a dissonance or discord. By the use of both, the artist communicates to us the joy or sorrow of his soul, in an immediate manner; and by the solving of dissonances, which concludes a contest of tones, he communicates that excitement which always follows the conversion of grief into joy.

But more than this, acoustics can not at present tell us. Music has not only scientific but psychological abysses: and no psychologist, even though likewise learned in art, has yet been able to penetrate them. But they exist, because the composer's elevation into pure feeling, into the feeling of the harmony of his own inner nature with the world of sound, exists. "It is," says Prof. Grassmann of Stettin, in his excellent treatise on "*Acoustics*," (Stettin, 1837, p. 25,) "the joyful or sorrowful emotion, which we feel within ourselves in a truly physical and real manner; and again, it is the pulse of our own heart, the deepest longing of our breast, which takes full possession of nature, and is given back again to us through musical tones; so that we may feel ourselves to be no longer individualized, but sunk again within the depths of the universal life. This most secret and profound emotion within us, by a wonderful sympathy, arouses even the least stimulable portions of our nature, and leads us into joy or grief, insomuch that we can hear, sounding back to us, the most secret tremors of the soul; as if nature were calling to us, 'I understand thy profoundest desires; I partake of thy pleasure and thy sorrow.'"

Singing has a great influence upon the life of the feelings. There is truly such a power as the Power of Song.‡ From the battle-songs of the ancient Germans, therefore, down to the patriotic songs of the present day; from the hymns of the early Christian Church to the chorals of Luther, we find it employed for the highest and holiest purposes of our race; not to refer to the analogous place which it filled among the nations of antiquity. It should especially be remembered that it operates, by awakening and stimulating the religious feelings, upon the will, and thus becomes a means of elevating the moral nature. Song is not only a promoter of the Beautiful, but through it of the Good.§

II. CHARACTER, PURPOSE, IMPORTANCE, AND NECESSITY OF INSTRUCTION IN SINGING.

The character of instruction in singing, is derived from the character of the art itself. As this has for its object to produce the beautiful by means of a union of words and tones, the former has for its object, words, tones, and the union of them. It therefore includes exercises in

1. Understanding and pronouncing words, which comprehends hearing, reading, understanding; or expression.
2. Understanding and producing tones, comprehending melody, rhythm, dynamics, harmony; or, vocal exercises.
3. Conjoining tones and words, which is the union of the two former, in singing, proper; or, execution.

The exercises in words are the same for singing and language.

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* I will quote one similar case from my own experience. In each of the rooms of a school, the class was in the habit of beginning their daily work with a short morning song. The mingling of different tunes and modes sounded ill without; and as circumstances did not permit all the classes to be assembled together for a common morning devotional exercise, it was decided that only one class should sing at a time, each in its turn, a prayer being offered in each of the other rooms. But after a short time all the pupils petitioned for the restoration of the old custom, alleging that it was impossible for them to begin their work without singing.

† "When Christianity had awakened the life of the feelings, and had supplied it with the loftiest ideals of existence, humanity could find only in music a sufficing mode of expression, and thus was gained a new Christian art."—"*Æsthetics of Music*," by Dr. Hand, 1837.

‡ "By the influence which music exerts upon the hearts of all, it operates most powerfully upon the character."—*Kocher's* "*Music in the Church*."

§ Klopstock said to Rouget de Lisle, author of the "*Marseilles Hymn*," that he was a dangerous man; for that he had killed more than fifty thousand Germans. What then might be said of Körner, Arndt, Schenkendorf, and others? Henry the Lion's motto was

"Fight without song
Can not be strong."

They secure for the pupil a store of imaginations and thoughts; and, as has been observed, they train the understanding, the memory, the fancy, and the æsthetic faculties.

Exercises in tones belong properly to instruction in singing. They give a knowledge of the system of tones, as a separate department of creation, distinguished by an abundance of phenomena; they develop the acoustic faculties, without whose cultivation no education in harmony is possible; and as has been already observed, they train the understanding, the memory, the æsthetic faculties, and the voice.

The exercises in singing, to repeat the observation, have a peculiar influence in enriching and elevating the emotional life, and indirectly upon the determination of the will toward what is good. For it may here be observed, that the sense of beauty, as it becomes developed in any one direction, becomes also, according to the laws of psychology, easier and freer of development in other directions; in this case, namely, in the direction of what is morally beautiful.

Such are the formal and the substantial educational influences of singing. It is likewise in a high degree adapted to assist in leading the child toward what is beautiful, good and true; and to really accomplish this, is its purpose.

It is for this purpose, also, that it is so important for the common schools, which are themselves intended to serve the cause of the beautiful, the good and the true. It may even be said to be absolutely indispensable as a department of common school duty, because it promotes the objects of all the rest, in a manner not otherwise to be supplied.*

The consideration of some of the special influences of singing as a duty, will only confirm their views of its value. It is an excellent means of sharpening the powers of observation, and of accustoming the pupil to acting promptly as directed by a word, a nod, a look. It thus counteracts both the indolent carelessness and indifference of some, and the precipitate hasty ways of others. In short, it is of great value in a gymnastic and disciplinary point of view.

In most other studies, each single pupil stands by himself and acts for himself; or at least a community of action is not indispensable. But the study of singing puts a close and strict constraint upon all the class together, both in an external and internal sense.†

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* "Music, by its rhythm and time, imbues the feelings with a regulated harmony. So highly did the Greeks value music, and in so many ways did they practice it, that the expression a "musical man" was equivalent to ours of a "cultivated man." They therefore bestowed the extremest care upon this study, which was designed to unite in a beautiful habitude, readiness, openness, circumspection, and a most powerful mental discipline. "*Pedagogy as a system*," (*Die Pädagogik als System*,) *by* Dr. Karl Rosenkranz. 184[illegible]

† "A choir is like an association of brothers. It opens the heart; and in the streams of *song they feel themselves to* have but one soul and one heart."—Herder.

And lastly; it may be observed, that good instruction in singing, by developing the pupil's faculties for rhythm, accent, and melody in speaking, renders very valuable assistance to the increasing efforts at present being made to elevate the style of reading above the repulsive sing-song practiced in so many of the ancient schools.

In concluding this statement of the importance and necessity of teaching singing in the common schools, I may not inappropriately quote the following authoritative opinions:

> Music is a means of culture so healthful for sense and soul, so powerfully promotive of virtue and godliness, that we are bound to train our youth in it with conscientiousness and dignity, zeal and perseverance. NAGELI.
>
> Music may be considered a department of man's intellectual life, which he can not omit without restricting and weakening himself. It is one of those intellectual endowments by means of which he is to become conscious of, and joyful in the world, himself, and his mental life. MARR.
>
> Even if the young are unable to attain to any important grade of artistic power, music deserves, on account of its educational value, as possessed of a peculiar power of influencing the mind and the heart, one of the highest places as a department of study. NATORP.

III. APPLICATION OF THE GENERAL PRINCIPLES OF INSTRUCTION IN SINGING.

A. *Two Courses; their relation.*

The instruction in singing should be both formal (disciplinary) and material (efficient in the study itself.) These two purposes require:

1. A series of elementary exercises; an elementary course.
2. Practice in singing songs, &c.; a singing course.

The former is to give the pupil a knowledge of the necessary principles, and a mastery of them; and the latter, to train him in expression and feeling. We may lay down, therefore, with a view to secure these objects, the following principles:

The elementary course should

1. Continue during the whole period of school attendance.
2. Include all the elementary tones.
3. Proceed by an unbroken progression.

And the singing course should

1. Also last during the whole school period.
2. Be related to the whole life of the child, both within and without the school.
3. Include nothing which is not significant and attractive.

We shall hereafter recur to these principles and add to them. The present purpose is, to inquire what should be the relation of these two courses to each other within the school?

Should the elementary course precede the other? In this case, the children would during a certain time have only preparatory exercises, *without singing;* and for a long period together; for the elementary course, to comply with the second and third principles just laid down respecting it, could not be concluded for weeks and months; which would violate the first principle relating to the singing course, and also the first relative to the elementary course.

We are thus naturally led to the idea of connecting both courses. The most suitable way of accomplishing this, seems to be, to apply in the singing course, the principles learned in the elementary course. This however, sometimes leads to a violation of the principles relating to both courses. It is evidently impossible, for instance, to find songs which shall correspond with all the steps of the long unbroken series of exercises, which shall be satisfactory in point of beauty, and shall bear upon all the various aspects of the child's life.*

There is therefore no mode left, except to divide what can not be connected; to conduct the singing course independently, parallel with the elementary course. We must be able to sing, at Christmas, "Glory to God in the Highest!" and on the king's birthday, "God save the King," without having to inquire whether in either of them there has not been used some progression or measure which had not been practiced. If some such freedom is not taken, we shall never see the fruits ripen which have been for thirty years looked for from the instruction in singing.

But, it may be asked, How then shall the children be taught to sing? I answer, in that manner which is adapted to the grade of development of their musical powers. Those who can only sing by ear, should sing so; and he who can do more, should do more; whether he can only follow in a general manner the outline of what the notes set before him, or whether he can sing strictly and surely the notes as they stand. The singing course requires the application of all that was learned in the elementary course, but in selecting songs we should not depend entirely upon the former. The pupils should in good season receive the notes, with a brief general explanation. Then each of them should make the best he can of them. Such is both the ancient and modern practice of almost all instructors in singing in chorus, both for small and large classes.

But, it may be further inquired, is not this too mechanical a practice? Does not such a course almost altogether prevent singing with a due feeling of the expression?

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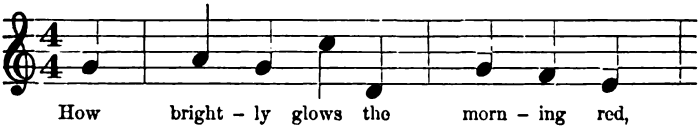
* At the Martin's Foundation in Erfurt, as appears by the Rhenish "*Gazette*," (*Rheinische Blätter*,) Vol. VI., No. 3, p. 273, all the songs are learned by rote, without notes; that is to say, without any artistic and methodical gradation in their order. It is stated a little further on (p. 276,) that the director of that institution often spends as much as a fortnight in searching and referring, and years in corresponding, to find a suitable song or melody, "because he subordinates the religious instruction entirely to that in singing;" and "rejects all songs which are not good in text and melody, in every particular." I would inquire how long his researches and his correspondence would be, if he should have reference, in addition, to anything like systematic progress?

To this I may reply:

The problem which the child must solve in order to sing with proper expression, is usually stated thus: To be able to sing a choral or simple air from the notes without the aid of the teacher. But do you know what is required for this? This problem, in the first place, is one in which many persons never learn to solve; because it has not pleased God to endow them with the requisite power of apprehending the tones as written.* Neither, again, do even remarkably endowed pupils often solve it before their eleventh or twelfth year, however early their instruction is begun, however carefully and skillfully conducted. And only those children solve it at once, who possess very distinguished musical powers; such who open the whole world of musical sounds to themselves as it were with one magical blow.

And do not be misled if you hear of, or even think you have found, one or another school where the pupils have learned in a very short time to sing from notes or figures. Upon a close examination you will always find one or the other of the following cases true.

Either the airs sung consist of short phrases scarcely including any notes except the first, third, fifth and eighth, and unsatisfactory and crippled, such as the following:



or, the pupils do nothing except to keep time; that is, they follow after a certain feeling of the succession of the tones, while the teacher, in the pride of his heart, thinks they are reading the notes; or, some more capable children are acting as choristers to the rest, who sing after them unintelligently, by ear.

But again, what does "mechanical" mean? Where does it begin, and where does it end? A, sings an air wholly by ear, while B sings it by the notes, by his comprehension of the intervals of the octave. A, it may be said, learns mechanically. B, however, although in a higher grade, also learns mechanically. C, again, who feels the meaning of all the intervals, sings by note accurately without depending merely upon a knowledge of the scale, but does not understand what are the harmonies at the base of the melody:—he also sings mechanically. D, who sings also without depending upon mere knowledge of the scale, knows these harmonies, but not the laws of their connection:—he sings mechanically too. Lastly comes E; whose attainments are equal to theirs and who knows the last item also, but has no idea of the mathematical basis of the system of musical tones;—he is a mechanical singer too! The truth is simply this;—children will, and ought to, and must learn songs all the time; joyous, powerful, living songs. And what can be the harm, if they only sing them by rote, if they can not sing by a knowledge of the scale; or by that knowledge if they have it, if they have not attained to the intuition of the melodic interval? Each one of our faculties is from God, the inferior as well as the higher. Therefore watch over each and make it useful in its own time, and accomplish some good thing with it!

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* The result of my observations upon more than a thousand pupils of the most various ages and grades of development, is as follows:

Memory of tones, is universal.

A certain sense of tones, without any clear intuition of tones, is quite frequent.

Comprehension of tone, and certainty in it, quite rare.

And these conclusions are confirmed by the following extract from the "*Rhenish Gazette*," (Vol. X., No. 3,) of an article on instruction in singing, by Karow: "For singing, as well as for music generally, certain natural endowments are necessary, and one destitute of these, whatever his efforts, will not learn to sing. We may compute that, of the singing classes in the schools, the following proportions will be found; of eighty children, ten will become very skillful and competent singers; twenty others, not distinguished, but still competent; five and twenty others, will sing well enough with the rest, but not in solo, as they will depend upon the rest; twenty others will not trouble themselves with the notes, but will sing only by ear; and the remaining five will be unable to sing, being defective in ear or voice, or both."

B. *Contents and Management of the two Courses considered, further.*

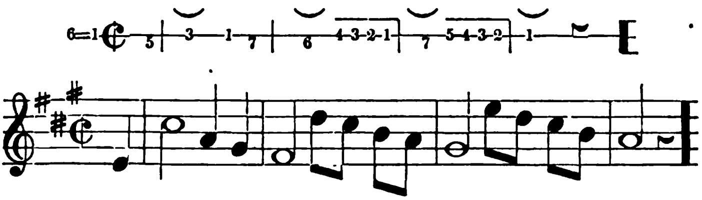
I. Generally: and

a. Notation. To about the end of the eighth year the children should study without making use of written notes. After that time, however, they should always be used. This delay in using them follows from the principles of proceeding from the simple to the complex, and from the known to the unknown.

It is however necessary both for formal and substantial reasons, that written music be invariably taught. For however little the pupil may know of singing by note, his execution will always be freer in character then if he has learned exclusively by rote. But the very great majority of teachers of singing unite in testifying that under all circumstances, the use of the notes is an important aid in all practice and repetition. And if others maintain from their experience the opposite, and perhaps even say that the notes are a hindrance, they only prove that however interested they may be in singing, they do not know how to use the written notes.

In teaching singing, we should distinguish two principal stages; singing by ear, and singing by note.

The instruction should be by means of actual vision. The representation of sounds by notes is the method most obvious to the eye, and therefore unconditionally to be preferred. Compare the following two modes of writing an air:



Those exceptionally able pupils who are now and then found in every school, can, according to all experience, sing with equal ease from notes and figures. But it is quite otherwise with all the rest. Whatever may be said to the contrary, they find the notes much the easiest; that is, unless they are drilled in a quantity of unmeaning rhythmic and melodic phrases, instead of real airs, that present a variety of rhythms and intervals. With most children, either the musical faculty gradually develops to the point where they can sing an air with an entire understanding of it, or that degree of attainment is altogether wanting. They are thus, until their fourteenth year, if not permanently, left to practice singing by note, in such a way that they guide themselves, in general, by the form and location of the notes, but where they bring out each single note rather by a sort of feeling of what ought to follow the preceding one, and by means of a knowledge of the scale, than by any real and clear knowledge of melody or the air itself. As long, therefore, as a pupil is not able of himself to execute each note of a written melody, exactly as it ought to sound, so long he has nothing to do with figures, and would get none except utterly indeterminate information from them. But the method by notes always gives him some assistance; it represents to him the relations of the tones, and he has only to look at the notes, to find at least a leading sketch of the melody. And this material representation is of great use in retaining the melody. As the eye seizes upon the groups of notes, the memory connects the tones with them; and it often needs but one glance at the notes to recall whole melodies which have been forgotten. But the figures afford no such assistance. One row of figures looks just like another; and the pupil must go one by one through the whole series, and pick out each note, before he can tell, what the melody is. Therefore, no figures.

The notes should be learned in the key of G, not in that of C, which is in scarcely any collection that most used.

b. With respect to singing.

Whatever is learned by children should be learned as thoroughly as possible; or if that has not been the case, should at once be made so. What is defective neither educates in form nor in substance; and indeed in the former sense it is positively injurious. One third sung too flat brings after it twenty other flat thirds; and passing over one pause endangers the time at every other pause; &c.

In every stage must be unconditionally required purity of intonation, correctness of rhythmic representation, observance of the dynamic marks, clearness of enunciation. Other things must receive a proper relative share of attention.

This perfection in what the children learn must especially be required in three respects; Firstly, the problems, to be solved must always be suitable to the pupil's grade of attainment; the course of instruction must be one of unbroken progression. This principle is universally known and yet often quite disregarded. In many schools, music too difficult is selected for practice; and the unavoidable result is a lamentable disfigurement of musical works perhaps the noblest of their kind. What is the occasion of such errors? Often vanity; often ignorance of music, not always of an excusable kind.

Secondly; the teacher must be competent to give in every case such directions and guidance as are required, in order to avoid what is false, or to remedy it. No pupil can arrange the succession of problems for himself, without the invigorating aid of the teacher. A whole class may perhaps sing an interval too low, and all exhortation to sing it higher may be fruitless, however earnestly they endeavor to do so, because they do not see what the interval is. In such a case the teacher must aid them, by singing or playing the required note correctly.

If the possibility of correctness by the pupil is conceded, then thirdly, the teacher must insist with persevering and unbending strictness, that the problems proposed be solved without error. This proceeding will accustom the pupil to correctness, which will become to him both a musical and a moral necessity. Once more, therefore, endure nothing erroneous! Every thing depends upon this. He is a forlorn teacher enough who permits inaccurate singing for four whole years, with the idea that things will improve in the fifth year, because "people learn to walk by stumbling." That proverb, like many others, is a heap of meal with a cat in it; and he who can not apply it better than that ought to be ashamed. To such I would say: It is *not* by stumbling that people learn to walk; it is by walking.

Rules for practice.

As important aids toward singing correctly I may name the following:

1. Unless the contrary is strictly prescribed, sing with the full strength of the voice. It is a great fault for the children not to produce a good full tone. A whispering, lisping, powerless melody is never true. But loud singing is not screaming. If the pupils keep strictly to the musical tones they can not scream.

2. In much of the practice, an instrument should be used. Fortunate is the teacher whose school children come every Sunday to church, and standing around the organ, sing the chorals with care and perseverance. That will be worth three singing-lessons a week.

And generally, of elementary singing practice, we may say:

No instrument. Very bad.

Piano-forte. Somewhat better.

Small school-organ. Better again.

Violin. In general, better still.

Church-organ. Very good in some cases.

Sometimes one and sometimes another, according to circumstances. Best of all.

The non-use of an instrument occasions such crying evils, that every one must understand them himself. Of the instruments above-named, the piano-forte and organ are better than the violin, for accompanying part-singing; but for exercises in accent, and practicing single voices, the latter is much to be preferred. For while playing the violin, the eye can be kept upon all the children, which is not often the case with keyed instruments in ordinary school-rooms; it can be carried about; and its sharp and piercing tones are much more impressive than those of a piano-forte, or of a small school-organ. The tones, again, can be modified upon the violin, in any desired way, &c.

But let me not be misunderstood. Singing with an accompaniment is not an end, but is the means to an end. A choir accomplishes its proper, real, and most beautiful work, only when singing truly and surely without accompaniment—*a capella.* The same object should be sought in every village school.

3. In singing by beat, the beat should be kept without any break, either by the teacher or by the children, or by both. The teacher should keep time by counting aloud, or by movements of his bow, a rod, &c., each pupil being to go strictly by it. If the children keep time, it should be either by causing some to count aloud while the others sing, or by having all mark time. This they should do, not by using movements like those of the instructor, up, down ; up, right, down, &c., but by audible strokes of the hand either on a table or into the other hand; a much easier, more natural, and more useful method.

4. *If orthography* is the schoolmaster's heaviest cross, enunciation

while singing is certainly one of the second rank. Nothing will avail toward this end, except for the teacher to use zealous and unintermitting strictness with the children—no, first with himself, and afterwards—with himself again, and after that with the children—in the enunciation of everything that is read or sung in the school.[*]

II. In particular; and

a. Elementary course. This should include

aa. Exercises in the understanding of the melodic, rhythmic, dynamic, and harmonic relations of tones; exercises in hearing, which, by causing the pupil to note by written marks what he hears, will lead to a knowledge of writing music.

bb. Exercises in singing; in the production of melodic, rythmic, dynamic, and harmonic tone formations. A distinction should be made between dynamic exercises and vocal exercises proper, in the strict sense; such as are intended to operate upon the material of the voice, and to give it strength, endurance, sweetness, flexibility, and quickness. Nor can the harmonic exercises be properly referred to those in melody. In order to avoid confusion, the following compendious classification will be found convenient: 1. Melodic exercises, including those in harmony. 2. Rhythm. 3. Exercises for the voice, including dynamics.

To proceed to the necessary directions as to the arrangement and conduct of these departments of practice.

1. It has already been stated that the elementary course should extend through the whole school period, its easiest exercises may be commenced with children of five or six years old. For the rest, "Art is long, and school time short." There are many things which must be studied only by advanced scholars, such for instance as the minor key, &c.

2. The elementary course, as has also been observed, should include all the elements, and therefore the harmonic. Harmony, even in its elements, is of especial value for formal training; and is also very attractive to pupils. It opens to them an entirely new view of music.

3. The principle already laid down, that the elementary exercises should proceed without any intermission, is a universal one; but in singing it is of especial importance, which is the reason why it is repeated here.

4. The matter should be arranged at once subjectively and objec-

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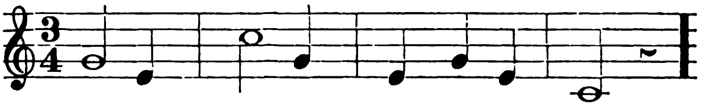
[*] There was a little girl who, in a song to Spring which she had learned in school, sang "*A Moor* out of his shell, springs out the tender shoot," (*Ein Mohr, &c.,*) instead of "*Upwards* out of, &c.," (*Empor, &c.,*) and when told that the latter was the correct word, she answered that her teacher knew best about that.

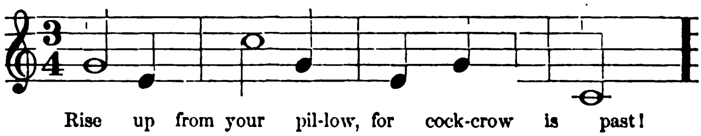
Again; a boy was asked what they sung in school, and said, "The Chandelier," (*Der Kronleuchter;*) having caught that sound instead of the word "Scale," (Tonleiter.)

tively. To arrange it wholly objectively is unpedagogical; wholly subjectively, impossible. It is not correct to pursue one department through, as rhythm for instance, and then melody, but they should be taken in corresponding portions; first the easiest parts of all the departments, so far as they belong to the matter in hand, then the more difficult ones, and so on. But this subdivision must not be carried too far, for fear of losing the connection of what is taught.

5. The different departments should be so taught that some one of them shall always be the main subject, and yet so that from one step to another they shall always form a whole. The former of these requisites follows from the principle of taking simple things before complex; the latter will enliven the children, and render the teaching substantial and significant. If, for instance, the time be $\frac{3}{4}$, and the melody that of the major common chord of the first, there may result forms like this,



And words may be set to such phrases; as, for instance,



The smaller the attainments of the pupils, the more care is necessary to preserve them from what is unmusical and unpoetical. As they proceed further, it is of course easier and easier to select not only brief musical phrases, but entire songs, which can be used first for illustration, and then in the singing course. But care must be taken that the songs do not become the principal thing, and the practice of the elements secondary.

The rule that only one department is to be the object of study at a time, must not be construed to mean that no time should be kept while studying melody, and that the rhythmic exercises should be in monotone. So complete a disjunction as this of the elements of music, neither accords with the nature of music nor with that of the child. We often find rhythm without melody it is true, as in the drum; but melody will not accept the converse, and go without its companion and supporter, rhythm. Even the simplest exercises very soon become wearisome and distasteful if they include no rhythm.

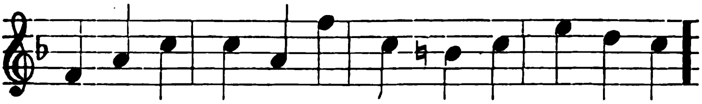
The children's minds develop all parts together; and therefore the melodic exercises should have some rhythmic forms, and the rhythmic ones some melodic form.

6. The course of proceeding should be from things to their names and signs. When, for instance, the children are to go from quarter notes to eighth notes, some quarter notes should first be played, while the children beat in four-four time; then a sudden transition should be made to eighth notes, which will strike the attention of the children, after which the name of the shorter note may be told them, and its representation shown.

7. Even during the stage of singing by ear, melodic and rhythmic voice-exercises should be given.

8. The harmonic element should be as much as possible omitted from the melodic exercises at this stage. It should only be introduced so far as is necessary to understand and correctly sing the major common chord in its simplest forms.

9. The vocal exercises of this period should be arranged with very great care to limit them to the capacities of the age of the children. They should, in general, consist of very easy successions of quarter notes of moderate pitch, sung sometimes loudly and sometimes softly; such, for instance, as these:



10. The harmonic element is most appropriately brought out in connection with the scale. It is true that very little work can be done with it, but that is no reason why none should be done. The following points may be taught:

aa. Construction of common chords or triads upon the first, fifth and fourth of the key.

bb. Construction of the chord of the seventh on the fifth of the key.

cc. Establishment of the following as the fundamental musical chords:

I. V. I.
I. IV. I.
I. IV. I. V. I.
I. V. I. IV. I.
I. IV. V. I.

It will be of course understood that these principles must be brought out by means of *actual* intuition. Mere words and figures would be entirely useless. The children must hear the chords and their successions. For this purpose the school organ[*] will be found very useful, but not indispensable, for the teacher will have a living organ; namely, the children themselves.

11. Vocal exercises in the scale—with rather more advanced children therefore—should be made a chief study here.

The best material for this practice is the scale itself, which should be sung in long, sustained, *crescendo* and *diminuendo* tones. The common schools have nothing to do with artistic runs, trills, &c. Instrumental accompaniment is especially necessary here.

The middle notes of the voice should be chiefly practiced, and in the scales of D, E♭, E, and F. The children should never be required to force out very high notes by a violent effort, which proceeding can only do harm. And it is as unfair as it is ill-calculated, to endeavor to train the children to a more correct style of singing by making them sing every air a third or a fourth higher than it was set by the composer.

12. The pupils should be trained to write upon the staff the notes which they hear. Diligent practice in writing music should therefore be required. Otherwise the pupils' attainments will be entirely one-sided. To sing from note is one thing; but it is another, and equally important for musical culture, to be able to write down notes that are heard. Writing music also constrains that class of scholars who are disposed to accommodate their singing to that of the rest, to the exertion of all their musical faculties. And it is the only mode of continuing the instruction after the children have arrived at the point of intuitional comprehension of the music, and of preserving them from innumerable errors. If Nägeli had done nothing except to introduce writing music as an exercise into the schools, he would even then have done them an exceedingly great service.

b. Singing Course.

I shall repeat here the three laws already laid down, and shall add others.

1. The singing course should continue through the whole school period. Even the youngest pupils will readily sing simple airs by ear; and according to all experience will partake of their enlivening and improving effects.

2. The singing should have a real reference to the life of the child.[†]

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[*] The melodeon, perhaps, in an American school.—*Trans.*

[†] "The simplest enjoyment and the simplest instruction, are enlivened and reinforced by singing; and what we even fail to accomplish by instruction in faith and morals, may be *taught by song."—Goethe, Wilhelm Meister's Wander-Years.*

At the *Rauhe Haus* near Hamburg, great stress is laid upon singing. Credible reporters

Singing is intended to enliven, ennoble, and cheer the whole of man's life. Regard should be had to the present and the future of the child; to his permanent and varying relations to nature, other men, and God. With reference to the present condition of the children, instruction in singing should, above all things, stand in the closest connection with religious instruction; including the faith, love, and hope of Christians. And on every occasion of school life when the religious feelings of the pupils are appealed to, at the beginning and end of lessons, weeks, months, or years, at preparation for a church festival, at confirmation, the king's birthday, &c., singing should be employed. In our day, the liturgical element, in which singing holds an important place, has been introduced for religious purposes into schools. This is much to be rejoiced at; and may be of very great service.

There should be a little singing festival in the church at least once a month; and not merely on such occasions as visitations, consecrating an organ, &c. This might be done without difficulty almost every where. But it will be necessary to confine the selections to the simplest class of music, and to persevere in accustoming the congregation by little and little to take more pleasure in such music, than in the ungodly uproar of the usual style of church music. Materials truly useful should be selected, every thing should be thoroughly practiced, and care should be taken that the audience may understand the words.

Besides religious songs, secular ones should also be learned, so that the children may use them as a means of enjoying themselves at home, at play, at festivals, during walks, journeys, &c. And for this purpose, such music is appropriate as has the artistic effect of transporting the child into conditions of existence quite strange to him.

How shall reference be had, in the school singing, to the future of the scholars?

First, by having a good stock of chorals.* Chorals are an indispensable necessity of religion and sacred worship. Every child should be able at leaving school, to sing at least fifty or sixty chorals from memory.

There should also be a suitable number of secular songs. With proper management, the pupil may graduate in possession of as many as thirty such. What should their subjects be? Experience shows that the religious feelings of the people expresses itself through the medium of chorals. For this reason I should use songs for other

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describe the judicious mode in which Mr. Wichern makes use of it at prayer and labor, exhortation and admonition, at serious and cheerful occasions. and sorrow and joy, and of the important good which he *thus* accomplishes.

* *These correspond to our* usual church psalmody.—*Trans.*

purposes. Of them, also, I should exclude some kinds, viz: 1. All songs of particular vocations, except war-songs, and for their proper localities, mountain songs and sea-songs. 2. Songs for occasions that rarely happen in actual life; such as, "Up! with mountain-staff in hand, forth with joy to Switzerland;" which is nevertheless in itself a good song. 3. All songs which, though perhaps good in themselves, do not correspond with the popular mode of thought and feeling; such as, "Know'st thou the land where the lemon-trees bloom?" 4. Love songs. 5. Drinking songs. I add a mere suggestion of the proportion in which I would perhaps arrange thirty songs to be learned, namely: five, to incite to good company; three soldier's songs; three traveling songs; six for general expressions of pleasure, and for observation of nature; four patriotic; five romantic historical; four miscellaneous. Total, thirty. For girls, I would substitute cradle songs for the soldiers' songs, and for the traveling songs, others referring to the observation of nature.

3. All songs should be beautiful, both poetically and musically. What is worthless in itself can never develop the artistic sense, nor properly cultivate the feelings. There are good words to bad tunes, and wretched rhymes to beautiful tunes. And it requires much study on the part of the teacher to acquire a sure judgment on this subject.* Especial care is needed with respect to children's songs, properly so called; for among the great number of them are many bad ones. A children's song is never good unless it can be sung with some enjoyment by grown persons also. Moralizing songs for children, in particular, are bad, and always will be; and so are those where the children are made to sing to each other, and encourage each other to joy, to innocent cheerfulness, &c.; such as,

"Open brothers, ear and heart,
Unto teachings wise."

"Our daily work is done at length:
Now for a joyous game!
Pleasure for working gives us strength,
And strengthens all the frame."

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* "Notwithstanding the great number of songs for the young, yet but very few of them are really adapted for use; partly on account of their faulty and spiritless melodies, and partly, and especially, on account of unsuitable words. * * * * The text of a song must be adapted to the young, clear and plain, joyous and vivid; equally removed from watery and feeble sentimentality, and from a stupid jumble of morals and phrases."—*Memorial of the Nuremberg Education Society.*

As music is variously taught and practiced in the teachers' seminaries, many young teachers come to believe that it is an easy thing to compose for singing So they proceed with great confidence to make motets, and hymns and cantatas, and make all possible haste to introduce their compositions into a church or a school. Great evils are to be apprehended from this source.

Some valuable observations upon this pseudo-poetry are to be found in Franz Horn's "*Forte-piano*," and Hiecke's "*Instruction in German in the German gymnasia*" (*Der deutsche Unterricht auf deutschen Gymnasien.*)

With regard to the relation between the words and music, we can not be too mistrustful, in particular, of operatic airs with words set to them.*

Songs, to be appropriate, must be both objectively beautiful, in themselves considered, and suited to the children's capacity. Children should not be forced up to any thing which is without the sphere of their apprehensions. On this point, I shall hereafter remark further.

4. Each style of songs should be used for its proper purpose; for each has its peculiar influence in training the pupil.

a. Sufficient reasons have already been given for cultivating both church and secular singing in schools, it may be added, that the former can not properly be very extensively used in the lower classes, and must commonly be sung somewhat faster than at subsequent periods.

b. Care should be taken to have the singing in unison, or in parts, as the case may demand either. Children less than nine years old, usually sing in unison. Part singing is not natural to them, whatever credit it would obtain at examinations. With older children the case is different; they may sing in parts; but should still not transgress the limits of popular requisites in the artistic direction. Part-singing is however so efficient a means of artistic training, and its power over the feelings is so great, that it should not be omitted, even in the smallest school.

On this important subject many mistakes are made. The following principles may serve the reader as initial points for his belief.

aa. A mixed choir is always most efficient; and should therefore be formed wherever possible. The school will furnish sopranos and altos; and there can always be found some accommodating youths or men, who will sing tenor and bass. The thing can easily enough be done without sounding drums and trumpets, with prudence and perseverance.

The societies for men's choirs seem in some places and lately to have hindered the prosperity of small mixed choirs. This is much to be regretted, however useful those societies are. Forget not the children!

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* In an extensively used collection of songs, the "Hunter's Chorus in the Freyschutz," is to be found, set to an Advent hymn! In the same, "Christ a gardener," is set to the duett from Titus, "In friendship's arms;" which, as a reviewer in the "*South German Messenger*," (*Suddeutscher Boten*,) says, "fits like a theatrical costume on a clergyman."

bb. In schools where only the children can be employed, the following plan may be adopted, which will prevent very various errors, namely: The children should sing chorals, generally, in unison; secular songs in two parts; and all music for religious, and especially church festivities, in three parts.

Chorals can not and should not be sung in parts, for the reason that time will not be found for practicing them in that manner; and because it would prevent those appointed for the middle and lower parts, from thoroughly learning the air—a great disadvantage.

Only on some few special occasions should a choral be sung by the children in three parts; and if such an experiment should succeed, it would probably be beneficial.

Chorals in two parts are always somewhat dry. But if the teacher will have some such, let him be careful to see that the second part is of an independent and marked character.

The reasons for singing secular songs in two parts are these:—

1. This method is indicated by the nature of that sort of music.

2. The practice will be found sufficient for the needs of the children in that particular.

3. It does not, like singing in three parts, impose on some of the children the necessity of sacrificing themselves for the sake of the rest, by the unnatural practice of singing in the lower register, which is also in itself uninteresting to them, and if long continued, very wearing.* But the church requires a more dignified style. Here, singing in two parts seems empty and dry; at least three parts are necessary. Nor should the choruses in the liturgy be sung in two parts only; but rather in unison, with organ accompaniment. Children can profitably sing in four parts only under very favorable circumstances.†

c. Solo singing, as well as singing in choir, must also be attended to. This is necessary both on account of the individual development of the pupil as well as the formation of his style, and the consequent influence of it on the feelings. With regard to this last point, I need only refer to such songs, motets, and little choruses, as are used in school in which choruses and solos alternate. The effect of such pieces when well executed, is very good. It also has a very good effect, when some single verse of a song is sung by some one person, the whole singing the next. The solo singers should be trained separately, by which however I do not mean that they should be trained in the higher artistic departments of music.

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* Gersbach, Herder, Rinck, Mühliney, B. Klein, and the profund Nägeli, have, I believe, scarcely set any children's songs in more than two parts. Their statements of the reasons, however, are not sufficiently lucid.

† *There are very various* opinions on this point, and I know that many persons differ from . *But I have many* authorities on my side.

5. Care should be taken, not only to select music suitable to the children's capacity, but to practice them long enough to be able to execute them with certainty and freedom.

This principle has already been indicated in substance, but ought to be here again stated in full and expressly.[*] It is not until all technicalities are done away with, and all sense of constraint or impediment by difficulties is removed, that the heart of the singer opens itself. The desperate efforts of some singers, or entire choirs, to accomplish a task beyond their abilities, does not even afford the audience the pleasure derived from the breakneck leaps of a rope-dancer. Therefore, no great contrapuntistic choruses, nor elaborate solos. All that is required is simple songs, and little motets and choruses, at the utmost not more difficult than the most difficult of Hientzsch and Erk. If circumstances imperatively require that the children should execute some more elaborate piece of church music, the most skillful of them should be selected, and practiced in private on the cantatas, hymns, &c.

6. The practicing of songs, during the period of singing by ear, should be by playing or singing them over to the children, who should then endeavor to execute them.

When the period of singing from note begins, some ten or twelve lessons will probably be needed to acquaint the children with the main points as to the meaning of the notes, especially their rhythmical value; which should be thoroughly illustrated by examples. Then will follow the use of the notes in practicing songs. The children should be prevented from becoming discouraged if they do not at first understand more than a very little of the details of the system of notes. They should be allowed to be astonished, not at what the notes do not do for them, but on the other hand as the real help which they afford. And they will be much delighted, as the meaning of the written notes, at first so puzzling, becomes gradually more and more distinct, and when at last the song which is given them to sing shall contain its own explanation.

C. INSTRUCTION IN SINGING, IN COMMON SCHOOLS OF THREE CLASSES.[†]

(Two hours of singing in each class, weekly.)

1. *Lower Class.*—(Four half hours.) In each half hour; Elementary Exercises, ten minutes; Songs, twenty minutes.

2. *Middle Class.*—(Two full hours.) *First:* Indispensable information as to the notes, and for practicing songs; together with repetition of songs previously learned. This during from four to six weeks.

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[*] "In order that the execution of compositions may be as little as possible interrupted or hindered by ignorance or hesitation, and that no perplexity may interfere with the artistic conceptions of the singer, and thus prevent the successful training of his feelings."—Nageli.

[†] *Viz., of a three years'* course.

Next, in each hour; Vocal Exercises, ten minutes; other Elementary Exercises, twenty minutes; Songs, thirty minutes.

3. *Upper Class.*—(Two full hours.) *First:* Continuation of the fundamentals of written music, and repetition of songs already learned. This during three or four weeks.

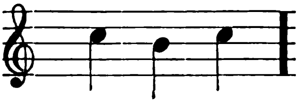
Then, during each hour; Vocal Exercises, ten minutes; other Elementary Exercises, twenty minutes; Songs thirty minutes.

Details on the above points.

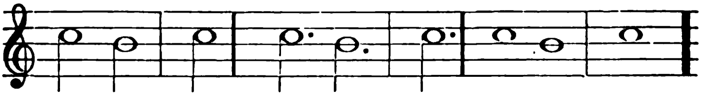
a. Lower class.

The elementary course consists of simple exercises, in the singing by rote of single tones and simple connected tones; in distinguishing high and low, long and short, loud and soft tones, in counting to time, &c.; such as are prescribed in almost all the better class of books on the subject. A course of vocal exercises should also be combined with this.

Take for example the following cadence.

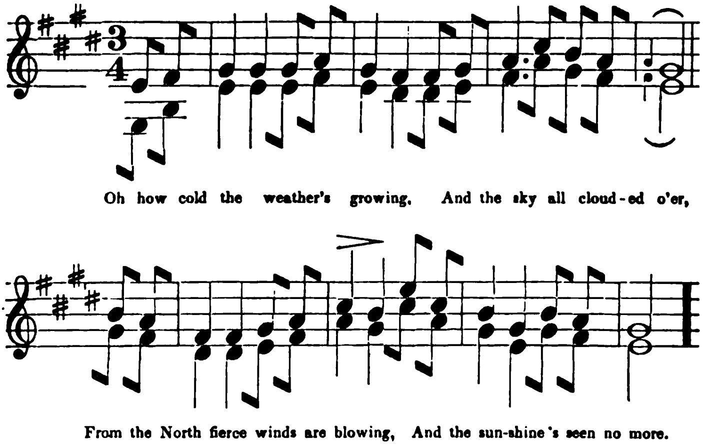


The teacher plays these notes, the children counting them. Then let them describe them, somewhat thus; "The second tone was lower than the first, and the third higher than the second; and the third was like the first." Then let them sing them, to the sound *ah*, first getting the measure of their duration from the playing of the teacher; who must by the way watch carefully to see that the last note is not flat. Then let them count to each tone, one, two, and one, two, three, and one, two, three, four, while the teacher is playing them; and let them also beat time. And then let them do the same to their own singing of the notes. In these cases, they will sing the following.



Then let them sing the same notes to words, such as "summer comes," or the like; which will give an opportunity to train them in enunciation. That is, they must say, not "sum–mer," dwelling on the m with their mouths shut, but su–mmer, holding the vowel sound, &c. Lastly, the cadence may have a name given to it; it is a "cadence from below." Such exercises will be found very interesting, *if conducted with* spirit.

The songs, in the lower class, must be sung by ear, after being played or sung by the teacher. The following may serve as an example:


Oh how cold the weather's growing, And the sky all cloud-ed o'er,
From the North fierce winds are blowing, And the sun-shine's seen no more.

First the words should be repeated to the class, and said over by them. Any mispronunciations should be corrected; and the words "o'er," "north," "fierce," &c., briefly explained. The teacher then announces that he will play the melody. All are attentive. He plays the first half of it, once, twice, thrice, four times; the children beating time, which they can easily do. Some of them will at once begin to hum over the air, but should be stopped. The fifth time, they may all sing it, softly. Then the teacher sings it alone, then plays it alone; and then the children sing it by themselves, the teacher marking time for them. Perhaps they will sing the second or third G too low, or fall behind the time, or take breath after "cold," or make the first note of the third full measure too short, &c.; all of which errors should be corrected on the spot. For a change, sometimes part of the class may sing, and sometimes all; and perhaps some one of them may be found bold enough and able enough to sing in solo. The teacher should always accompany, to prevent falling from the pitch. After the first half of the melody has been learned, the second should be practiced in the same way. When the whole is well committed, the teacher may play second to the children's soprano, or sing a second, and play the first. It will not sound well for him to sing the air. Then the remaining stanzas of the song may be learned. Every thing should be executed correctly and well. The result of such a course of training will be very satisfactory. When the children go home, they will be singing the song, wherever they are. What more could be desired?

b. Middle class.

As has been stated, this class should begin by devoting from four to six weeks to a very simple preparation for singing by note. The object of this preparation should be to make the children acquainted with the leading points of the notation, without burdening them with details. It can not be expected that the children shall learn to sing independently by note; but they will receive whatever assistance the notes can give them; their eyes, ears, and feeling for time, will be trained. An excessively long step will be avoided, by thus placing the children midway of the great space between singing without notes, and the free reproduction of what the notes represent. They will attain to the position occupied by those many thousand singers who do not indeed really sing by note, but who still would not on any account be without the notes. In short, the pupils will be placed in a situation where they will learn songs, not with a full intuitional appreciation, but with the aid of the use of their faculties of tune and time.

What should be the exact importance of these acquirements? I think it should be sufficient, if the children learn that

1. The tones, rise, or fall, as the notes do.

2. The notes show whether the tones proceed onward by gradations or jumps.

3. The steps of the latter kind are various; thirds, fourths, fifths, sixths, sevenths, octaves. The pupils must learn to recognize these promptly by the notes. A short series of exercises should be given to acquire this facility, preparations having been already made for it in the lower class; by playing one and another of these intervals in different parts of the major scale, and making the children what they are; and then by the reverse method of calling for an interval, which the children are to sing. But nothing difficult should be introduced.

4. The notes indicate the length of the tones.

5. There are whole, half, fourth, eighth and sixteenth notes. A whole one is as long as two half ones, a half as two fourths, &c.

6. There are also rests or pauses, fourth rests, eighth rests, &c.

7. A note or a rest very often has a point or dot with it; which increases its length one half.

8. The notes are arranged into groups or sections, each of which is called a measure. One measure may contain four quarter notes, or three, or two; or three eighth notes, or six, &c. The pupils must be able to name all these.

9. They must also be able to beat time. For $\frac{4}{4}$ time, four motions of the hand must be made, for $\frac{3}{4}$ three, for $\frac{2}{4}$ two, for $\frac{3}{8}$ three, for $\frac{6}{8}$ r, *or sometimes* two. It will be a sufficient exercise to them, if ap-

propriate portions of airs are written on the blackboard, named, and then played, while the children keep time, counting aloud.

10. Various marks are used to indicate whether to sing loudly, moderately, or softly.

11. The words are printed underneath, one syllable to each note; if several notes are connected together by a stroke or a curved line, they are all to be sung to one syllable.

12. There are many other marks, which will be learned afterward. The present is only a small beginning.

To know the names of the notes will be of no use to the children in this stage, because the present object is not an introduction to the system of the tones, but merely to afford the means of gathering by the eye an acquaintance with the outlines of a melody.

About midsummer, if the course commenced about Easter, the children can continue their singing practice in the green and flowery meadows; where they may wander without being constrained by methodical hedges and ditches, walls and timbers; freely, joyously, and, if God will, piously.

Rules for singing practice.

1. Whatever is to be understood must, so far as the children's capacity will go, be made entirely clear to them, and then stated by them.

2. In general, the children should be encouraged to make exertions of themselves; and they should be encouraged—especially those who are in their second year—to endeavor frequently to sing the air which is in hand, without assistance. But this must be done cheerfully and with interest; without any misery or any inflictions.

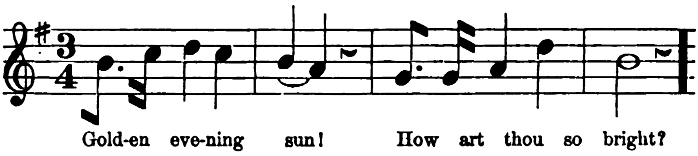
3. Where the children's knowledge fails them, play them the air.

4. Part of them—to repeat the suggestion once more—only count time aloud, while the others sing. But all of them must always keep time by light blows on the other hand or on the table, until the music is learned with entire certainty.

5. Every eye should be strictly required to be directed to the music. The less capable may often be assisted by pointing out one note after another with a stick.

Close adherence to these fourth and fifth rules will often give the children a facility in singing by note beyond what could have been believed.

An example will illustrate this course of proceeding. I select the beginning of a well-known song by Nägeli:—



Let the notes be very plainly written on the blackboard, at first without the words. Then let the notes be first read, thus: "Dotted eighth; sixteenth, rising second; fourth, rising second; fourth, falling second, &c., &c.;" ending with "fourth, rising fourth; half, falling third."* Then a rising fourth and a falling third may be sung. The children can sing these intervals themselves, with occasional assistance, if their ear has been sufficiently well trained. That is, if they remember clearly the triad g, b, d, they will not sing g, b, instead of g, d. Then those who are in their second or third year's practice may sing the scale with *la*, except a few who are to be stationed with the smaller children, to count aloud, keeping time, also, with blows on the hand or the table. If the air is correctly sung, well; if not, let it be played over by the teacher. Then the smaller children may sing along with the rest, another section counting; or all may beat time. This exercise should continue until the melody is sung with entire correctness and in strict time. Then the text may be written under the music.

This practice is for the last half of the singing lesson. The first half should be used for the elementary course. My mode in this particular would be the following: Take one of the better works on teaching singing, and begin where the subject of written notes is introduced, and proceed strictly as is written, going very slowly, since there is time enough; and be satisfied with whatever acquirements can be made. Only, some portions of the songs given as exercises in time or melody may perhaps be omitted, if the purpose of comprehending the written tones is attained; since the singing-course has particular reference to the development of the feelings of the children.

This should usually be opened by vocal exercises; which are also often properly introduced just before or during the singing exercises. Our practice (at Weissenfels) is to practice the scale, at first in two tetrachords (c, d, e, f; and g, a, b, c:) then altogether, usually with the sound a, b, sometimes loudly and sometimes softly, (the latter is much the most difficult, but is very important;) and always beating time (with two, three, four or six beats to a note.)

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* This mensuration of the intervals is of the greatest importance; at least, my own experience shows that for the majority of pupils it is the simplest and surest way of learning to sing truly. It is an excellent thing when a pupil feels the key so well as to be able to strike the intervals correctly by taking the notes in their relation to the key note. But this power will fall him as soon as the melody passes a little beyond the limits of the simplest juvenile songs, and even within those limits will be much confused by a modulation. In these cases, if *the pupil is not practiced* in the sort of knowledge of the intervals referred to in the text, he *will grope about in an* uncertain manner, as is the case with too many who sing by figures.

Thus the pupil makes his way through the middle class. At his leaving it, his voice will be found somewhat developed, a fund of songs laid up in his memory, and his power of reading at sight gratifyingly cultivated. The latter however is very seldom the case to an extent that makes it allowable to dispense with carrying on the elementary course together with the singing course, in the higher class. Careful beating time must also still be kept up for a long period yet; it is only in the latter years of their school life that the more capable of the children will be found capable of singing independently by note.

c. Upper class.

Before proceeding here with the singing course, the pupils must be somewhat further practiced in written music, for the sake of easier understanding. From three to four weeks at the beginning of the course may be specially devoted to this purpose. However much progress may have been made in the middle class, or the elementary course, they must yet be taught in the upper class:—

1. That there is a universal (chromatic) scale which is several times repeated.

2. That it consists of twelve tones.

3. That the tones are so near together that it would not be easy to sing another between them.

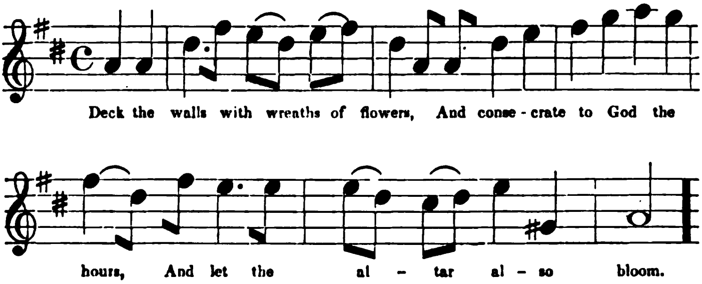
4. That the steps from one of these tones to the other is called a half tone or semitone.

5. That these tones have their fixed names and signs; and what these are. The scale most natural to commence with will be that of C, the intermediate tones being added. The nature of these semitones may be illustrated by marks, by a scale, a staircase, the keys of the piano-forte, the situation of the tones on the neck of the violin, and by playing and singing them over.

Reading written music, to which the middle class has at least afforded an introduction, must here become an indispenable preliminary to singing practice. The subject of the different keys can not be begun in these three weeks of instruction; it must be left for the elementary course, to be there treated deliberately and thoroughly.

About Whitsunday, of the third year, again, singing practice may recommence, the vocal exercises being resumed, and the elementary course *taken up again* where it was left off in the middle class.

I may properly give an instance of the instruction in singing of the upper class; for which I will select a Whitsunday hymn.


Deck the walls with wreaths of flowers, And conse - crate to God the
hours, And let the al - tar al - so bloom.

The course of instruction may be as follows:—1. The key, signature and time may be determined. 2. Count the measures. 3. Read the notes, as follows, a; a; rising fourth, d; rising third, f sharp; falling second, e; falling second, d; rising second, e; rising second, f sharp; falling third, d, &c. 4. Take up the longer intervals. Which are the thirds? The fourths? Who can sing a fourth? How does a sixth sound? &c. 5. The upper section makes an attempt to sing the scale with la, the lower section beating time and counting aloud. Every eye fixed on the notes! Trifling variations from the melody can easily be corrected with the violin; if there are any serious ones, the class must be stopped, and the error expressly corrected. If they do not succeed after two or three attempts, play the passage to them.

6. All the class sings the scale, naming the notes by name, and beating time accurately.

7. The words are put under the music.

When afterward the keys are discussed, they can be properly spoken of at each lesson. The principal thing, however continues to be that the children shall recognize the intervals, even if only by their numeral designation, and not by the interval of sound. Experience teaches that those who learn on that plan gain a very good degree of certainty and facility. It will of course be observed that as the elementary course progresses, the increasing vocalizing powers of the class can be more and more exercised.

I could now proceed, if my space would permit, to describe in very bright colors our scholar, now stepping forth from the upper class into active life, free, joyous, bold, and if God please, pious. But I leave every young teacher to imagine such a picture for himself.

III. DRAWING.[*]

BY DR. ERNST HENTSCHEL.

I. DEFINITIONS.

> "The cultivation of the faculties of representation and form, gives us a feeling for beauty, grace, form, and symmetry."—*Harnisch.*

Drawing is a mode of representing solid forms by lines upon surfaces.

A drawing, as a result of artistic labor, has either a purpose outside of the art—such are mechanical drawings, plans, anatomical drawings, &c.—or it is executed for its own sake; as are landscapes, fruit pieces, &c. In the former case, their purpose is principally one of material usefulness; in the second, they are executed with an endeavor after a beautiful external form; and are thus a representation of the ideal. But those of the first sort do not exclude the beautiful, for every object, without any exception, can be beautifully represented.

Material forms are either natural or artificial; and either geometrical, or irregular.

Various species of drawing are practiced; as,

1. Linear drawing, which gives only an outline of the object;[†] and shaded drawing, in which surfaces are shaded.

2. Geometrical and perspective drawing. The first represents objects in their correct relative proportions as to magnitude; the second, as they appear to the eye. The geometrical delineation of one side of a body is called an elevation; that of its plan, a ground-plan.

3. Free drawing and sketching; either with or without the use of rule, compasses, &c.

4. Copying, or drawing from another drawing; drawing from nature, or of real objects; imaginative drawing, or drawing of things conceived of by one's self; of which the two former are of things as they are directly seen, and the latter are indirectly based upon the vision of real things.

In all drawing, the eye, the hand, and the sense of beauty, are employed; as are also, in drawing from memory, the faculty of conception, and in drawing from imagination, that faculty.

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[*] Translated from Diesterweg's "*Wegweiser.*"

[†] Many persons include in linear drawing, drawing by the aid of the compasses and ruler.

II. SCOPE, OBJECT, AND IMPORTANCE OF INSTRUCTION IN DRAWING.

Instruction in drawing should include—

1. Exercises in understanding

a. Form, in itself,

b. The beautiful in form.

These constitute culture of the eye and of the sense of beauty.

2. Exercises in representing

a. What lies immediately before the student; as in copying and drawing from nature;

b. What has heretofore been before him; as in drawing from memory and from imagination.

These constitute the education of the hand in the service of the eye; and culture of the memory, the imagination, and the sense of beauty.

From another point of view, we may distinguish as follows:—

1. Exercises in drawing lines, angles, and geometrical figures, as a basis for all studies in drawing; that is, elementary drawing.

2. Exercises in representing objects of all kinds, or applied drawing.

The chief advantage of drawing is the culture of the various powers which it calls into action.

Training of the eye and hand.—The knowledge of what God has made, and of what man has made, depends in great part upon the apprehension of the forms of things. Form, therefore, is one of the most important phenomena of the material world. And who will deny that the knowledge of the creation is important? God, who has made such various works, and has given us the power of accomplishing and being conscious of our own culture, must prefer not to have us go blind through the world. And to open a child's eyes, not only to the forms of nature, but to those of the world of art; so that he can apprehend and remember not only the form of a plant or an animal, the course of a river or of a chain of mountains, but also the architecture of an edifice, the construction of a machine, or the plan of a city, must be admitted to be of very great importance.

The training of eye and hand which drawing furnishes, is a means of acquiring this power. Not only do we become accurately acquainted with the form of what we draw, but the work of drawing sharpens our observation of the forms of what we do not draw. Thus, drawing affords a knowledge of the material world.

In addition to this, we acquire the power of representing forms to others in a visible manner. This is a power of universal importance. A few lines will often do more than a long description.

Training of the eye and hand is also of great importance, not merely as a means of knowing what there is in the world, and of representing that knowledge, but also as a preparation for the duties of life. Thus it is of great use to many kinds of artizans to be able to draw a little, &c.

Training of the conceptive faculty.—Without this culture, the knowledge and understanding of the forms of the visible world is not possible. Through its exercise, the pictures are represented to the mind, from which the imagination develops new forms. And without the exercise of the imagination, it is impossible to conceive of any progress into the limits of the supersensual, the abode of religion.

Training of the sense of beauty.—This introduces us to that universal pleasure, that enjoyment exclusively possessed by none, which is derived from the beautiful in nature and art.

Every man, it is true, is to some degree fitted by nature to perceive and enjoy the beautiful, up to a certain point, but no further. He whose sense of beauty is not trained, loses infinitely. Take for instance the first example that occurs in actual life. A journeyman travels through a city full of beautiful architectural works. He goes stupidly in at one gate, and out at the other; there is no such thing as beauty for him. The buildings which he passes by neither have any present interest for him, nor will they hereafter be remembered except as masses of stone, rising high in the air, hollow within, accommodated with doors and windows, alike in one place and another, and erected merely from the necessity of security against wind and weather, thieves and robbers. But suppose another and better educated journeyman passing through the same city. How much delight will he receive through his cultivated artistic faculties? He will linger for hours, with the liveliest pleasure, before each building; and will go forward, stored with wealth of new studies, and remembering all his life with delight those impressions of his journeying-years.

The connection of culture in the beautiful with culture in morals is clear. In the recognition and the feeling, the loving and doing of the beautiful, coarseness and vulgarity, and tendencies toward debasing and sensual enjoyments, find a countervailing power. The virtues especially developed by the study of drawing are, persevering industry, love of unobtrusive right action, order, purity and decency.*

A brief quotation from Goethe may conclude this introduction.

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* Frederic the Great used to recognize his soldiers long after they had left the army, by the good order of their houses. An instructor in drawing might do the like. A boy who had attended school where, among other things, he had been obliged to learn the greatest neatness in writing and drawing, brought about at his return home a most beneficial reform in the external life of the whole family, by the vigor with which he opposed any deficiency in cleanliness and order.

The importance of instruction in drawing as a part of education, will best appear when we consider that by means of that acquirement we gain an increase of beautiful and noble pleasures derived from the external world. The whole realm of forms and colors opens to him; he acquires a new mental organ; he receives the most delightful ideas, and learns to recognize, to respect, to love and to enjoy, the beauties of nature.

Upon considering all that has been said of the intrinsic importance of instruction in drawing, and of its various practical advantages, we shall find that it includes no small number of qualities directly valuable as educational influences, both formal and material; and that it is accordingly an important aid in solving the problem of the common schools; which is, the bringing of the child to what is beautiful, true, and good.*

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* The hundreds who frequent a public museum can not sit comfortably in a liquor shop; and will soon come to feel that there is a direct contrast between men raised by art to the level of demigods, and men degraded by brandy to the level of beasts.—"*England in* 1835," by Fr. von Raumer.

The more recent reforms in education make this department of culture a universal benefit, no longer to be enjoyed exclusively by the painter, the sculptor, and the architect. And to this end, the primary school must provide that the eyes of its pupils are trained, their hands practiced in certainty and accuracy of delineation, and their feeling for beauty awakened and cultivated. In this manner an important service will be done to the farmer, the laborer, the mechanic, and the manufacturing operative. The farmer who can draw, will be far less the victim of his own ignorance, or of designing enemies, in setting out lands and woods, in dividing meadow, arable land, gardens, in adjusting his tools, and in all matters relating to building, hedging, and irrigation. One who is undertaking to build, whether from pleasure or necessity, can, if his school instruction has enabled him, judge correctly by the preparatory drawings of the taste, strength, arrangement, and convenience of the proposed edifice, estimate materials and cost, and then save himself and his architect much vexation and now and then a lawsuit. A wealthy patron of the arts will thus be enabled to understand better the works of artists, to estimate thus more correctly, and to value more highly and remunerate more fairly the artists themselves. Indeed, there is scarcely any person who would not derive benefit from this most desirable study. It has also a moral value which is far from contemptible. Young persons who have learned to draw, will in that way occupy many vacant hours which would otherwise be passed in idleness, with all its evil consequences. The result of this can not but be beneficial in families; and when the young have themselves grown up, and are themselves fathers and mothers, the benefit will be still greater. But individuals as well as families, will reap similar advantages from it, through its efficiency in averting many harmful and prejudicial influences. Any occupation of a regular nature, and fitted to employ hours of recreation, is a rich source of pure and quiet pleasures, elevating both to the mind and the feelings.—Wirth, in the "*Universal Swiss School Gazette*," vol. ii. p. 8, 9.

But setting aside all questions of mere practical usefulness, and therefore passing by the inquiry in what and how many human avocations drawing is useful and necessary—aside from all this, we know of scarcely any practice of more comprehensive influence than drawing. Instruction in it, in connection with that in the intuitional knowledge of geometrical forms, has an influence in stimulating and conjoining those two great elements of life, receptivity and productivity, unequaled by any other, so far as regards material existence. It makes demands upon eye and hand, upon mind and heart; and affords a methodical culture in accuracy, neatness, and in the sense of symmetry and of beauty. It offers the most efficient of all aids to instruction in natural history, natural science, geography, writing, and mathematics.—Dr. Zehlicke, in "*Mecklenburg School Gazette*," vol. i. p. 3.

Drawing is not only a suitable occupation for the young, but sharpens the vision, trains the hand for writing and other delicate employments, gives practice in observation and quickness of apprehension, affords a store of instructions and ideas, develops the faculty of order and the sense of beauty, gives activity and cheerfulness, and is absolutely indispensable in many occupations.—Zerrenner's "*Principles of Education and Instruction.*" Edition of 1833.

To aid in the actual solution of this problem is the purpose of drawing. If without it, it can not be completely and in all respects solved, the importance and indeed the necessity of it as a study are beyond doubt. It is always the duty of the common schools to give instruction in drawing; and only unavoidable deference to still higher necessities can exceptionally justify a temporary omission of it.

The actual state of affairs, it is true, argues against this opinion. In far the majority of the common schools, no instruction at all is given in it. Calligraphy is practiced with zeal and a great expenditure of time; a multitude of names of Asiatic rivers and Brazilian apes are committed to memory; and the most abstract grammatical relations are taught. But no care is taken to make the children familiar with the sphere of phenomena lying immediately around them, and to fit them better for real life, by means of drawing. The unpractical nature of the German mind is one reason for this; another is, that the Pestalozzian principle of a harmonious development of the fundamental human faculties, has, during the last ten years, not only not gained in currency, but actually lost. Whether this last fact is the result of our inability, light-mindedness and want of judgment, or of the truth that every idea has its periods of brightness and obscurity, is a question to be settled by others. To return to the practical view of the subject. The French are in this matter, as in others, more judicious than we. There the law enforces the teaching of drawing in all the elementary schools.*

III. APPLICATION OF THE GENERAL PRINCIPLES OF INSTRUCTION TO DRAWING.

A. *Outline of the Proper Exercises for the Common School.*

1. Both elementary drawing (of lines, angles, geometrical figures,) and applied drawing must be practiced; the former as a very necessary substructure for the latter, on the principle of beginning with the elements; and the latter, because the forms of the world around us,

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* The Royal Government of Magdeburg, in a circular order to the common and burgher schools on the subject of drawing, of April 6, 1847, reproves the neglect of it; which is the more surprising, inasmuch as there is scarcely to be found one school inspector who is not convinced "that drawing, which is in itself an occupation appropriate for the young, and of an innocent character, sharpens the vision, quickens the hand, trains the attention and the apprehension, conducts to intuitions and to ideas, develops the faculty and the sense of beauty, prevents tedium and idleness, and is of great pedagogical importance; and who does not know how many occupations require a knowledge of drawing; and that, especially at the present day, when such rapid progress is made in all industrial pursuits, drawing is a study absolutely indispensable" And the circular adds, "It is very true that at present, many things are studied in our burgher and common schools, and in many ways. But it is also true that all such studies, whenever they exceed what is necessary, should not be permitted; and that therefore the school department has long been endeavoring to fix the proper limits to the field of study; and that for a study so important as drawing, the necessary time must be found.

without comprehending and representing which neither the formal nor the material object of drawing will be reached, are almost always not plane figures, but solid forms.

The educating power possessed by elementary drawing, is not doubted even by its opponents. Nor does it deserve the common accusation of dryness and wearisomeness, if properly commenced and continued. Experience shows that boys find an especial pleasure in dividing an angle into three, four, or more equal or proportional parts, in constructing an equilateral triangle, an octagon, a circle, &c. Many maintain that the fundamental forms should be practiced only in real drawing—in drawing actual objects. But this would destroy a portion of the expected advantages; for besides the fundamental forms, all the collateral work which drawing from nature requires, must be repeated exactly as often as the fundamental form; usually without any benefit. An equilateral triangle must be drawn correctly, not merely once—for chance may bring that about—but twenty times; which would show that chance has nothing to do with it, and that certainty of execution has been obtained. But who would need to design twenty times over the whole decoration of which the triangle may form a part?

2. In applied drawing, exercises in drawing by hand and outline sketching, perspective and geometrical drawing, copying and inventive drawing, should, none of them, be wholly omitted. But as a general rule, the drawings in all these departments should be linear only, and not filled out by means of any shadowing.

The practice of free off-hand drawing is evidently indicated as necessary, by both the formal and material purposes of instruction in drawing. This formal purpose requires as great a variety of stimuli as possible. These can not be conceived of without free off-hand drawing. In respect to the material objects of drawing, the pupil who restricts himself to outline sketching, must give up the idea of representing a very large number of forms which could well be produced in free off-hand drawing. But there should not be such an omission. Instruction should be in accordance with nature; and this requires that the perceptions of the pupil should be directed to the whole world of nature and art.

With reference to the other kinds of practice, may be mentioned—

a. *Reasons for practicing outline drawing.*

The great accuracy which this requires, affords a peculiarly good practice of hand and eye, and has, in particular, great value as a training to observant, judicious, and provident activity. Any one who has accustomed himself to go about with circular and ruler, square and pencil, is much readier at apprehending than those who are ignorant of the use of them. Many objects in practical life, also, can not be drawn except in outline.

b. *Reasons for practicing copying.*

1. The requirements of actual life demand it.

2. A harmonious culture of the artistic faculties is impossible without practice in copying; and this both with reference to the technics of art, and to the cultivation of the sense of beauty. Such a culture doubtless requires in particular that the pupil should accurately comprehend a large number of given forms. But the mathematical part of drawing implies much less apprehension than representation, and even this only according to fixed and very simple relations. Drawing from nature again affords, more especially, training in apprehension; and the subjects selected may be as difficult as is desired; but still, only a relatively very small field of forms can thus be introduced into the common school for actual apprehension and representation. In drawing most animals, for instance, there would be very much discipline for both eye and hand; yet animals could hardly be made models for drawing in the common schools. The taste, again, would be very much cultivated by the study of classic architectural ornaments; but it is out of the question to go to Cologne or Strasburg to draw those there, not to mention crossing the Alps. Thus the necessity of copying becomes clearly obvious.

c. *Reasons for drawing from nature; geometrical (elevations) and perspective.*

1. The pupil improves in power of apprehending the various forms around him,* and in remembering them.

2. It enables the pupil to understand perspective drawings immediately upon seeing them.

3. There are frequent occasions in actual life when it is important and even necessary.

4. As an immediate, free and independent mode of reproducing what the eyes perceive, it has an entirely peculiar attraction for the pupil.

5. Acquaintance with the laws of perspective introduces the pupil to an entirely new world of ideas and thoughts; and it is certain that such an occurrence can not be without influence upon his general intellectual development.

These reasons in favor of perspective drawing, founded both upon the formal and the material purpose of instruction in drawing, are not without weight. There can be no complete instruction in drawing without that in perspective. If perspective has hitherto found little or no favor in our common schools, the reason is, partly the undeniable difficulty of the subject itself, and partly the lack of time, room and apparatus. It can therefore perhaps never be a universal study. But in all schools where space and time are not too limited, at least the more advanced pupils should make a beginning in perspective. Some details on this point will be given below.

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* "It is astonishing how many deceptions remain undiscovered without the practice of this art, and how invariably we see otherwise than as we suppose."—Otto.

d. *Reasons for practicing inventive drawing.*

1. The power of producing the beautiful already exists in the child, and shows itself in innumerable ways. We must develop it if we desire to avoid a one-sided culture.

2. It is certain that, as Otto says, this independent creation of beautiful pictures elevates the pupil to a consciousness of the rays of that divine creative power which appears in the human imagination.

3. Practical life often calls for ability to arrange or construct in a tasteful manner. Many mechanics could not get on without the faculty of inventing beautiful forms.*

e. *Reasons for and against drawing with shaded surfaces.*

aa. For.

1. It affords a knowledge of light and shade as found in the world without; that is to say, of one distinct aspect of the phenomena of objects.

2. It relieves the pupil from his dissatisfaction, upon comparing his unshaded sketches with the common shaded pictures, and discovering his own to be comparatively incomplete.

bb. Against.

1. It is of but little value, in comparison with a knowledge of outline drawing, in regard to the apprehension of objects in nature and art. Light and shade change continually, while outlines are more permanent.

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* Although I use the word "inventive" in an entirely general manner, the term of course naturally applies to the invention of symmetrical figures from modifications of the fundamental mathematical forms. I am not of the opinion of those who think that such exercises should be rejected on account of the lack of reality in such figures.

Those who doubt whether such figures can be called beautiful at all, seem to doubt also whether the habit is to be approved which has prevailed for so many centuries, of using such forms on walls. doors, windows, fireplaces, hangings, cupboards, tables, furniture, carpets, table-cloths, book covers, embroidery patterns. and in a hundred other such ways. But the fact that these objects do certainly exist. and that other similar ones continue to be designed and used. so that the figures in question do in fact have a relation to real objects, is a sufficient reason for not omitting them from instruction in drawing.

Otto states the necessity of the three principal departments of drawing, viz., copying. drawing from nature. and inventive drawing. as follows: "Drawing from visible bodies trains especially the eye; drawing forms kept before the mind by the imagination and produced by *it, and* still more the work of imagining them, trains the imagination; and the copying of *pictures already* executed, the sense of beauty."

2. For such drawing as is required in practical life it has sometimes no value, and at other times a very subordinate one.

3. If not very well prepared for and very well managed, it frequently produces a bad effect, and thus obstructs the cultivation of the taste instead of promoting it; and even renders the minds of immature scholars obscure and stupefied.

4. It wastes time needed for other most indispensable exercises.*

These reasons on both sides indicate that this department should be studied, but that its practice should be confined within somewhat close limits. Only remarkably talented and industrious pupils should be permitted to pursue it, and then not unless they have prepared the way by a thorough practice of outline drawing. Those collections of copies for drawing are quite unpedagogical, in which every thing is shaded, even from the very beginning. Unfortunately there are so many such, that more proper points are too often entirely omitted.

Having thus discussed the necessity of studying in the common schools the various departments of elementary and applied drawing, free off-hand drawing, outline sketching, copying, drawing from nature and inventive drawing, the next inqury is,

B. *The relations of these different departments of practice to each other.*

1. Elementary drawing is the basis for all the others, and is therefore the first step.

2. Perspective drawing from nature is the most difficult, and therefore should constitute the last or fourth stage.

Want of elementary practice has an astonishing power of interfering with the results in perspective drawing. This latter, moreover, requires a certain maturity of the whole man; and it is also less important for ordinary use than the other kinds. And in the small extent to which it can be learned at the common schools, it can have but a small influence, relatively, in developing the sense of beauty. All these considerations indicate that perspective should be the last department taught.

3. Outline drawing is not to be taken up with the elementary

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* The shading is certainly a main reason why, in so large a share of the common schools, notwithstanding all the time spent in drawing lessons, the people do not learn to draw. As soon as Johnny has practiced lines and outlines for a few months, he is given a large fruit-piece, a group of animals, a landscape, or a head, to shade. The outline is very quickly executed, for the circle is used; and "the circle is on purpose for drawing outlines;" and on he goes, with his shading. For twenty or forty lessons, he sits scratching vacantly, humming and thoughtless, until the wonderful work is completed. Then it is glazed and framed, is handed all round at the examination, stared at and bepraised by people who do not understand it, and our young hero, who can not draw a right angle, nor sketch a window, and who has no idea of beauty of form, receives a prize. At home, they hang up the picture with great ceremony, "in everlasting remembrance," in the best parlor. Poor Johnny!

course, but should come later, immediately before drawing in perspective from nature, except so far as it belongs to geometry, and is employed in the construction of purely geometrical figures. It thus should constitute the third step, or last but one.

On the subject of practicing outline drawing in the elementary course, opinions differ. Ramsauer says that it would be an unjustifiable waste of time to work with ruler and circle before the eye and hand gain firmness. Hippius directs a whole series of elementary exercises with the ruler, before beginning free off-hand drawing. Most teachers of drawing are of the opposite opinion to this. We incline toward the side which experience seems to have indicated, namely, that of the majority.

4. Between elementary drawing and outline sketching is the place for free off-hand drawing, applied to actual objects; which thus occupies the second place.

5. Having thus determined upon four principal departments, the question will come up, Where does copying come in; and elevations; and inventive drawing? We answer:

a. Inventive drawing has already been practiced in the elementary stage. But the pupil must always be made master of the materials with which he works; he must have seen specimens of inventions of the sort which he is expected to make.

The child can not develop the idea of the beautiful from himself. Some of the Pestalozzians have erred to an unspeakable extent on this point. Never was a more unpedagogical problem proposed than that of J. Schmid, for beginners—"Make a beautiful combination of isolated points!"

But where the imagination has been set in action by examining models, the pupils may be permitted to make some experiments in invention, for which reason we have admitted it as above. For it is certainly according to nature, to begin to develop the different phases of the artistic faculty in children, from even the very point where they begin to spring out. We must, it is true, have regard to the old motto, "*Non multa sed multum;*" in order that we may not, in avoiding one-sidedness, fall into the opposite error of studying too many things at once.

b. Drawing from nature, so far as it consists in making simple elevations, may be practiced during the second stage. For those just beginning it is too difficult, principally on account of the usually necessary reduction to a diminished scale.

c. Copying may be commenced in a very easy way, as soon as a good beginning is laid in elementary drawing.

All the preceding details may be grouped as follows, in a

General Scheme for Instruction in Drawing.

First Grade, or Elementary Drawing; and in connection with it, Inventive Drawing and Copying.

Second Grade, Application of free off-hand drawing; including Copying, Geometrical Drawing from nature, and Inventive Drawing.

Third Grade, or Outline Sketching; with a continuation of Copying and Inventive Drawing.

Fourth Grade, Perspective Drawing, exclusively.

This plan is in accordance with nature, as relates both to the pupil and to the subject.

C. *Directions for further practice in the different departments.*

GENERALLY.

The same principles which have been laid down relative to the succession and connection of the various departments of practice, are applicable also to the choice and selection of the materials for each separate one.

It is therefore necessary,

First, To draw various forms. For if the instruction given is to communicate any formal culture, the child must, as has been said, comprehend its entire scope. It is an error to choose artificial forms only, or natural forms only. The teacher utterly misapprehends the character of the common school, who causes architecture, or tools, or flowers, or landscapes, either of them exclusively, to be drawn. The pupil does not see either of them exclusively; nor is it the business of the common school to educate especially for any one occupation such as that of the carpenter, the cabinet-maker, potter, &c.

Secondly, It is the universal rule to begin with what is easy, and to proceed from that only with great caution. Now the easiest part of drawing is that with right lines; not perhaps where the fewest lines are used, but where the relations of lines and angles are easy of comprehension. Of the regular forms, for instance, an easy one is the regular octagon; and a difficult one, the regular pentagon. Irregular forms are easy, if they are derived from regular ones; as, for instance, the semi-circle; but difficult otherwise, as in the case of the eye, nose, ear, hand, &c.; all animals; most flowers and fruits; all trees; most tools, &c. Thus many of the designs most frequently given to children as elementary exercises, are entirely improper for the purpose; and great care must be taken not to be led astray by such titles as "*The Little Flower Draftsman*," "*Elementary Exercises in Landscape Drawing*," "*Studies of Animals for Industrious Boys*," &c.

The principal disadvantages of selecting too difficult subjects to be copied are, waste of time, discouragement of the pupils, or else vanity and overestimate of their powers. And in schools where there are several classes, a teacher who proceeds in a thorough manner, will find himself cast into the shade by this faulty mode of proceeding by his colleagues.

"But the children will not work well at easy exercises." Unfortunately this is too true. They want to make a great picture, of the market-place at Leipzig, and that, if possible, during the great Easter fair; the shipwreck of the Medusa; St. Genevieve; the battle of Katzbach, &c. But it will not do to permit this. The more difficult it is to bring the children, by a course of instruction unbroken, and yet interesting, appropriate, attractive and not wearisome, to the point where they will find their pleasure in solving with certainty the problems laid before them, instead of in their extent, so much the more zealously should we labor to accomplish it.

But even the most careful arrangement of the order of problems will not avail, unless,

Thirdly, The pupils receive the necessary explanations and assistance. Here failure is frequent. Perhaps the pupil is set to copy a flower. He begins at once, at one of the extreme points; and goes on to draw leaves, anthers, petals, pistils, &c., one after another, as zealously as possible, down to the minutest parts and details. After long and careful labor, his flower is finished; an excellent flower, but unfortunately quite different from the original. There are schools where drawing is practiced in this manner, year after year. But how easily would the pupil have accomplished his work in the case proposed, if he had at first been taught how to see the blossom correctly. The fundamental form would have been laid out perhaps by three or four points; and all the details would then have fallen into their places of themselves.

It must be plainly said, that in most drawing schools, instruction in intuition and apprehension is unjustifiably neglected. Many teachers have scarcely any idea of the basis of all drawing, of which the judicious Bräuer, in his "*Theory of Free Apprehension*," has observed, "Before any figure is drawn, it is necessary that it should be seen or understood in all its parts and relations." Here is a principal reason why so little progress is commonly made in this study.

But supposing that all the conditions hitherto laid down have been complied with; then, lastly and

Fourthly, It must be strictly required of the pupil, that he draw *well; that* is, correctly and with entire neatness. No botching or working over, indistinctness or fancifulness, smearing or rubbing, trifling or talking, will accomplish this. The whole of the pupil's power must be earnestly and perseveringly exerted upon his work. It is only by this means that drawing will become the important educational instrumentality that it may be made.

Working in company is much to be recommended. The task may be given out, the mode of performing it stated, and then followed at the same time, from point to point, by all. This trains to intelligent, orderly and regular labor. It is unnecessary to argue that all possible means should also be tried to enlist the interest of the children in the work which they are to do, and to conciliate their love of it.

DETAILS.

1. *Elementary Drawing.*

a. Should elementary drawing follow geometry, or geometry drawing? Neither, and for this reason; that the order of study of the two subjects must often be very different. Geometry considers the triangle before the square; while in drawing, many squares may be considered before many triangles are. And much that pertains to geometry is of no importance to drawing. For it results from the nature of the case, that the portion of geometry which is of use in drawing, is studied during intuitional instruction, and therefore long before drawing is commenced. Such points are, ability to recognize a right angle, a square, a circle, &c. I find no use in connecting geometry with drawing. But it is a different thing to repeat while drawing the fundamental forms, that part of geometry which relates to them. This will aid in thorough comprehension of the case, and is to be recommended.

b. There are elementary exercises which consist in drawing right and curved lines by the children together by beat, large free lines, if possible with a movement of the whole arm. These exercises are of great importance; they should be practiced at the same time with such others as require the closest care, and where therefore the pupil is working more by himself and in detail.*

c. Exercises in estimating the lengths of such straight lines as may be found at hand, by natural or artificial means, may, from time to time, be introduced between the drawing exercises proper, but should not be carried too far.

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* The opposition of many of Peter Schmid's pupils to this class of exercises, has for a long time been much less violent. Ramsauer says, "Brief and definite orders, and prompt and uninterrupted work according to them, regulated by keeping time, will accomplish an infinite amount of good in acquiring any kind of manual skill where practice is the thing required. While on this point, a word should be said of the applied art of writing. Markwordt, of Berlin, practices much in large free strokes. A great part of the so-called 'American method in writing,' also consists of large free movements in unison; and the results are so evidently good, that the system is daily coming more into use."

d. In arranging the subjects for practice, the objective and subjective order should be, as far as possible, united. According to the purely scientific or objective arrangement of the fundamental forms, the equilateral triangle should come before the rectangle; but in drawing the order should be different, because the latter is much the easiest to draw. The same is true of the pentagon and octagon. A course of instruction arranged with reference to subjective principles may, it is true, at first seem disorderly rather than orderly; but a more acute vision will discern the "red thread" which leads through the whole.

2. *Copying.*

a. Subjects beautiful in themselves should be selected for copying. For example, a finely formed vase should be selected rather than a common kettle. The faculties used in drawing will be as well trained by one as by the other, while the former is of greater value in developing the sense of beauty.

b. For beauty of execution, only the very best designs are sufficiently good; those only moderately well done can not go.

c. For the purpose of working in classes together, the use of designs large enough to be seen by the whole class—those made to be hung up—is much to be recommended. An industrious teacher will even, if necessary, prepare such himself.

It is still more important that the teacher be able to design on the blackboard. Hippius says, "The children can see the drawing constructed; can watch the beginning and the end of it; and can obtain more thorough ideas as to apprehension of objects. They should themselves proceed to imitate these drawings, which should be suited to their capacities, on a smaller scale. The manipulation of the work should be such as to serve as a model to the children; the teacher locating in the proper places the necessary initial points, in a careful, I had almost said a learner-like manner. When the figure on the blackboard is complete, it should be analyzed, and understood both as a whole, and in the relations of itself to its parts and of the parts among themselves. After this mode of intuitional study has been sufficiently practiced, the teacher should again go through with the process of drawing the figure, as it were in his thoughts, by dictating the work point by point. At the same time he should pass round among the benches, directing and assisting wherever necessary, reproving or praising, and endeavoring to keep all the pupils in cheerful activity.

d. Even when the children draw each by himself, after small separate originals, they should often be made to draw their copies on a larger or smaller scale, for the sake of gaining in freedom of conception.

e. With an eye to the ultimate and principal purpose of instruction in drawing, it will be better for the pupils to sketch many objects with few strokes, than to occupy the same time over a few drawings, more elaborated. But these latter should not be entirely excluded. The best mode is to produce, from time to time, some larger work, and to draw between or along with these many sketches not so much finished in detail as full of meaning.

f. For copying, more reference should be had to the sex of the children than was the case in elementary drawing. Thus, architectural subjects should be chosen for the boys, and beautiful vases for the girls; weapons for the former, flowers for the latter, &c. One-sidedness in selection should, however, be avoided. The girls should be made to comprehend the beautiful forms of the higher departments of architecture, and the boys the characteristics of leaves and fruit. In short, to repeat the principle once more, it is the whole world of forms which the school should prepare its pupils to comprehend.

3. *Inventive Drawing.*

a. This may be practiced both upon spontaneous conceptions and upon real things. In either case, the pupil may be required either to complete a design, to decorate it, to vary it, or wholly to invent it. For instance,

1. Ideal representations. Completion—to draw the whole of some figure from half or a third of it. Decoration—to ornament a rectangle with lines all converging to its center. Variation—to change a regular octagon into an irregular one. Entire invention—to draw a group of equilateral triangles and decorate them at pleasure.

2. Real objects. Completion—to draw a window, having one quarter of it given. Decoration—to ornament a design for a table top. Variation—to change a quadrangular window into one with curved lines at the top. Invention—to design a beautiful trellised gate.

The usual order of these exercises should be, first, free representations of real objects, together with drawing mathematical figures. Completing a design is usually easier than decorating it, and that again than varying it; while absolute invention is the most difficult of all. The lessons should be arranged in accordance with these principles.

b. Occasionally an entire class, or at least a section of it, should work together at invention. If, for instance, the problem is to decorate a square, the children may step up to the board, one at a time, and work upon a square drawn upon it. This will furnish many opportunities for remarks, and the inventive faculties of each pupil will benefit all.

c. Sometimes the pupils should merely sketch their conceptions without completing them; and the teacher may then criticise the sketches. In this way, several designs may be sketched at one lesson. The slates may be sometimes exchanged about in such a manner, that each pupil can see the designs of all the others.

d. Invented designs which are to be finished in detail, should be approved in outline, to prevent expending hours of the pupil's labor on a design which may, perhaps, at last be rejected.

4. *Drawing from Nature.*

First, as to geometrical drawing from nature.

a. Either actual objects, such as are about the children, should be drawn, such as doors, gates, trellises, floors, windows, cupboards, stoves, monuments, &c., or there should be used, as Otto very judiciously recommends, an apparatus on purpose, by means of which all sorts of figures can be set up together, on a ledge on the blackboard. The drawing may either be of the natural size or on a reduced scale. In the latter case, great care must be taken that the children shall justly estimate the relative sizes of the reduced objects.

b. Just at this point it is of especial importance that, in the beginning especially, much work should be done in common. Before the children put pencil to paper, they must fix upon all the relative dimensions, not by means of a mere cursory view of the object, but of a careful survey of it. It should be a point of honor to come as near as possible to correctness. When all the estimates have been made, the teacher may name the dimensions before the class; and then they may proceed to draw.

c. This is a very appropriate place for tasks to be performed at home. "Draw the front of your father's house; the windows of the sitting-room, &c. I will take occasion to compare the drawings with the originals." And so on.

About this time a beginning may be made with perspective drawing, perhaps somewhat as follows:—

a. Practice the children in seeing real objects in a perspective manner. This is not very difficult, and has the advantage of showing the pupil what perspective is, even if he does not become able to draw on its principles.

b. Perspective may be taught by copying. Perspective designs *may be given to* be copied, arranged in a progressive manner, and instruction on the laws of perspective may be given at the same time. This is the method of Soldan, Warmholz, and others; and is not liable to any weighty objections.

c. Exercises both on copying and seeing should be practiced.

d. Drawing from real objects should be practiced, either by section of the class at once, or singly.

Drawing is of course a more useful exercise than mere seeing; and drawing from real bodies is better than from another drawing. And it is better to display the article to be drawn conveniently upon a table for one, two, three, or at most four scholars, than to elevate it somewhere for the whole class to draw from.

The circumstances must govern in each particular case. I would however have some exercises in seeing, in every school where drawing is practiced at all. I add a few hints for such as have proceeded far enough to draw real bodies.

a. To complete the shading of what is drawn should be unconditionally forbidden. The common school has no time for this, if the children are to be made at all acquainted with perspective.

b. The subjects should not be too difficult; such, for instance, as plaster heads, landscapes, groups of animals. The principal thing is to teach the children to comprehend and represent with ease the simplest perspective appearances.

c. The children should not be troubled with difficult theories of perspective, nor, on the other hand, should they be restricted to the brief rule, "Draw what you see." Some knowledge of the laws of perspective is indispensable for the moderately and less capable pupils, as well as an acquaintance with some simple means of aiding in seeing in a perspective manner.

d. These laws of perspective, however, should not be given, but discovered. It is wrong, for instance, to tell a pupil that a circular surface or thin body can be seen as a straight line, and then to hold it up to him that he may be convinced of it.

e. The most practical possible application should be made of the principles which lie within the scope of the common school. These should be joined to the exercises on cubes and prisms, for instance, a drawing of a chimney, a chest of drawers, an open door, &c.; and the best scholars may afterwards draw a house, a bridge, a gateway, &c.

5. *Outline Sketching.*

a. The common school is not the place for designing pillars, capitols, and similar architectural constructions. They belong to the industrial school. The business of the common school is limited to this: 1. Geometrical construction of lines, angles, and figures; 2.

The application of these to the drawing of simple sketches and ground-plans.

b. Great skill may be attained in this kind of drawing, so far as it can be carried with the aid of the simple instruments which the children can be trusted to use. Without using these, the practice would do more harm than good.

c. The use of the circle and ruler must be industriously practiced, in order to the acquisition of skill in it. Many simple problems should be given out for using them; as, for instance, to draw four angles one after another, each half as large as the preceding; to magnify to many times its own size, &c.

d. As to selecting subjects for ground-plans and elevations, the following suggestions may, perhaps, be of service:—

1. Select for drawing, a plan of the school garden; the church-yard; of some building, as the church; an elevation of the school house, &c.
2. Let the children copy some plans, ground-plans, elevations, &c., in order to become acquainted with the usual mode of doing such work.
3. Let each pupil himself make out some such plans, ground-plans or elevations of his father's house or garden, &c.

D. *Course of Study.*

This is rather to indicate one mode of arranging the work, than to be followed to the letter.

1. *Common schools of three classes.*—Drawing should be practiced only in the middle and higher classes; not in the lower. It is safe to calculate that children of at least three different grades are always to be found in each class; so that divisions must be made. More than two such divisions are usually too many, as experience indicates. Thus each class will have a two year's course, and each pupil will, at least in that part of the study where the whole section works together, go twice through one of the halves of the course.

a. Middle class.—Here it will be well to permit the capacity and industry and progress of each pupil to determine which half of the course he shall go twice through with. The course should be as follows:—

First half—

1. Elementary drawing. Lines, angles, the easiest divisions of lines and angles, the rectangle, isosceles triangle, square, rhombus, rhomboid, equilateral triangle. Straight and curved lines together, *by beat.*

2. Copying. The simplest forms with straight lines, partly representations of real things, partly variations of fundamental forms.

3. Invention. The easiest exercises in completing and varying forms; usually to be executed in common.

4. Beginning of estimating dimensions; usually of those where one of the dimensions to be estimated may serve as a measure of the others.

5. Examination of the model drawings.

Second half—

1. Elementary drawing. Continuation of the division of lines and angles. The regular hexagon. The regular octagon. Different curves on straight lines, and half and quarter circles. Irregular polygons; waving, serpentine and spiral lines; the circle, ellipse and oval. Curved strokes together, by beat.

2. Copying. In the first half year of designs with straight lines only; in the second, of those with curved and crooked lines. The straight lines should always be in simple combinations; the curved ones in connection with straight ones; and easy flowers and fruit given only to the most capable of the children.

3. Invention. Tasks somewhat more difficult, but no designs of real objects yet to be permitted.

4. Drawing from nature. Very easy elevations; and only to be practiced as a secondary exercise.

5. Study of model drawings.

6. Estimating dimensions; partly with and partly without the use of the legal measures of size and distance.

b. Upper class.—Here the scheme must be a little more carefully arranged. I suppose the children to draw in perspective only during the last year of school, and then during both lessons; so that their copying and inventive drawing must be done at home. The children of thirteen years of age, again, should form one section, (Section 1,) and those of eleven and twelve another, (Section 2.) Then the instruction for the year may be arranged as follows:—

1. From Easter to St. John's day. For Section 2, off-hand drawing; exercises in copying and invention. Section 1, perspective; first beginning.

2. From St. John's day to Michælmas. Section 2, off-hand drawing; copying, invention, elevations. Section 1, perspective, continued.

3. From Michælmas to Christmas. Section 2, outline sketching; geometrical constructions; but for the girls instead, off-hand drawing. Section 1, perspective, further continued.

4. From Christmas to Easter. Section 2, outline sketching; ground-

plans, and in off-hand drawing; copying, invention, elevations. Section 1, perspective, concluded.

Observations on the foregoing plan.

1. In the first quarter, Section 2 is so employed that the teacher may busy himself mostly with Section 1, where his aid will be quite indispensable. And in Section 2, also, the exercises, in copying especially, can be adjusted to the capacities of each individual scholar.

2. In the second quarter, Section 2 will have advanced far enough to work by themselves for say half an hour together. That time may thus be spent in introducing Section 2 to the department of drawing elevations. The pleasant summer days will be found quite suitable for drawing in the open air; and the pupils, while unoccupied during vacation, may execute many drawings. Toward the end of this quarter, Section 1 may be set at drawing easy buildings in perspective, in the open air.

3. The third quarter will find Section 2 busily employed with circle and ruler. The pupils of twelve years old, who are going over the ground a second time, will be able to assist those of eleven, so that the teacher will get time to do some open air work in pleasant autumn days with Section 1. But if he does not think it safe to leave Section 2 alone, he may take them out also and let them sketch elevations.

4. When winter comes round again, Section 1 will be employed again in the house, in learning something of drawing bodies bounded by lines not straight. Section 2 will take up off-hand drawing again, in the departments of copying and invention; and some ground-plans may also be drawn.

5. The exercises in copying and invention should continue what was begun in the middle class, but not too rapidly.

For copying, pictures of flowers, fruit, ornaments and characteristic animal forms may be gradually introduced. The inventive drawing may be in part of imagined forms, in part from real objects. No teacher who pursues his subject with a really vivid interest, can fail to find abundance of materials for lessons and models.

2. *Common schools of two classes.*

a. Lower class. If the pupil remains five years in this class, he should draw during the last two. Thus we shall have pupils of eight and nine years of age, in one section; so that each will go twice over the year's course. The course should include all the first half of what was prescribed for the middle class of a school of three classes.

b. Upper class. Here there are many difficulties. I shall suppose two sections to be formed; one of the pupils of ten and eleven, and the other of those of twelve and thirteen, so that each section shall go twice through the course. The lower section should draw what was directed for the upper division of the middle class in a school of three classes. The first division may alternately draw in perspective one hour, and in the next partly make outline sketches and partly work at copying and inventing. There are many disadvantages in this arrangement, but I have not been able to make a better one which was not too intricate; and our pedagogical literature affords very little aid on this subject.

3. *Common schools of one class.*

Nothing can here be done in perspective. The pupils should draw, from their tenth year upwards, in two sections. The course of study should be that for the middle class of the school of three classes; except that the children should learn something of outline sketching during the last half year of their schooling. Some of the better scholars may perhaps be permitted to copy some of the exercises laid out for the middle class.

E. *Miscellaneous Observations.*

1. Beware lest the instruction in drawing educate the children in falsehood. Where every drawing which is shown at an examination is more than half done by the teacher, or by his assistants, such a result is certain to follow.[*]

2. The purely technical exercises of off-hand drawing should chiefly be done on the slate; but copying, elevations, finished inventive drawings, &c., on paper. It is necessary to be economical, but then pains should also be taken to enable the children to enjoy repeated examinations of what they have drawn by care and industry. It is always unpleasant to children to see a piece of work which is carefully finished, thrown away at last.

3. Avoid all luxury, especially in poor neighborhoods, in pencils, paper, &c. The children should understand the necessary truth that man must always learn to accomplish the greatest possible results with the simplest means.

4. It is not judicious unsparingly to cross out every ill done work from the pupils drawing book, for this may frequently destroy in a moment the work of many laborious hours, besides disgracing the book, as the children say. Only evident idleness should undergo so severe a punishment.

"Act honestly! Let your examination be a proof, not of what your powers as an artist are, but of what you can do, as a teacher, through the efforts of your pupils. Honor truth, and she will honor thee in turn."—*Hippius.*

5. The strictest care should be taken to make the children sit correctly while drawing; for carelessness in this particular will very easily lead to crookedness in weakly children. It is a great evil for the pupil even to turn constantly towards the right hand to look at the design to be copied. A conscientious teacher will use every means of avoiding such habits.

6. The pupils must be protected from too bright sunshine, by curtains or some equivalent means.

7. All conversation should be strictly forbidden during the drawing lesson. It is astonishing to what an extent the looking off from the work which is inseparable from whispering, interferes with and defeats the comprehension of the design and success in reproducing it.

8. The frequent use of India rubber is decidedly to be prevented. This is, in many schools, practiced to a miserable extent; no drawing being finished without having been rubbed out in every part, nobody knows how many times. Instruct the pupil in a truly elementary manner, teach him to apprehend, make him work with attention and care, and away with the India rubber!

9. Whatever work is given to the children to be done at home, must invariably be shown and examined when completed.

10. If possible, let the most skillful pupils be employed as assistants in instruction.

III. CONTRIBUTIONS TO THE HISTORY OF PEDAGOGY.

[Translated for this Journal, from the German of Karl von Raumer.]

PROF. RAUMER introduces the third volume of his "*History of Pedagogy*" with the following remarks:—

In this third volume, I am far from wishing to put forth a system of pedagogy. I have been deeply impressed by some strong expressions of the great Bacon, against systematizers.

"The wonder of men at learning and at the arts," he says, "has been made to increase by the cunning and technical arts of those who, having studied the sciences, gave out that they were perfect in them and had brought them to completion. For when men turn their attention to systems and subdivisions, these systems seem to them to include every thing, and to contain within themselves all matter which relates to the subject. And though such system may be ill filled out, or as it were empty, still they impose upon the common understanding by the form and fashion of a perfect science. The first and oldest investigators of truth, however, with more faithfulness and good fortune, bestowed the knowledge which they had received from the observation of things, and wished to preserve for use, in the form of aphorisms, or short separate thoughts, not knit together in any method; and thus they did not feign and pretend to set forth the whole of their art."

So far Bacon. As I abide by his doctrine, and therefore do not pretend to set forth the whole extent of my subject, the reader will find, instead of a system of pedagogy, mostly descriptions of single pedagogical subjects. These, moreover, are not treated at all after any one plan. Sometimes the presentation is of a historical kind; sometimes I have considered rather the present time. Sometimes the theoretical side is most prominent, and sometimes the practical. In this I was influenced by the various characters of my subjects, by my greater or less knowledge of them, and by the mode in which they had appeared to me in learning and teaching; in short, by my own experience of them. If I had undertaken to discuss all these subjects in one and the same way, the work would have been done in a colorless, monotonous manner; and such a method would evidently have been very closely connected with the evolution of a system.

The reader here receives the first division of the third part. In the second division will be treated instruction in the subjects omitted in the first. As a conclusion of the whole work, I have thought of giving a comprehensive view of the present condition of pedagogy; and am even desirous of endeavoring to portray truly and impartially the most eminent of living teachers.

I know well how difficult is this task, and how much self-denial it implies. Perhaps an author who has entered his sixty-fifth year is better fitted for such a task than younger men, who yet are "vigorous in love and hate." It is more easy for one near the end of his life to speak of the present as if it already lay far behind him, as it soon will.

Erlangen, June 1st, 1847. KARL VON RAUMER.

We shall continue our translations from this volume until we have completed them, by the reproduction of the whole of Prof. Raumer's great work in the English language.

INTRODUCTION.

THE EARLIEST CHILDHOOD.

"Speak, that I may see thee," said a Greek.

Accordingly, the child being unable to speak, comes into the world, as it were, invisible; and long preserves the deepest incognito. All the care of the parents is bestowed upon the little helpless body; physical education is the main object. This was the case with the Greeks and Romans. The Spartans used a rude method of alleviating the task, by passing a sentence upon the new-born child, of life if its body seemed healthy, of death if not. Rousseau's doctrine was little better. "I could not trouble myself," he says, "about a sickly child, if it were to live to be eighty years old. I can not be concerned about any pupil who is a burden to himself and to those who have the care of him."

To give all the honor to the body is a coarse and brutal estimate of man. Such barbarians would not have thought worth preserving the life of Kepler, the great German astronomer, who came into the world a sickly seven months' child.

Rousseau, in his teachings as to physical education, has kept in view, as his ideal, a completely healthy North American savage; a rule which will not serve for us domesticated Europeans. But one extreme introduces another; there prevailed, for great part of the eighteenth century, especially in France, a frivolous, unnatural method even in the education of small children. We have already become acquainted with these unnatural ways: the frizzle-wigged boys, with laced coats, and swords at their sides; and the little frizzle-headed girls, with their great hoop-petticoats. By their contests against these evils, Rousseau in France and his followers in Germany, as advocates of natural principles, did great service to the cause of physical education. The extreme views which they held, as happens at every reaction, disappeared with time, and the real good remained.

To refer once more to a few points. Rousseau admonished mothers of their maternal duties, in striking terms. It is not nurses, but they themselves, who are destined to bring up their children. If they would have their children love them, they must wait upon them with efficient maternal love.* He zealously combated the abominable custom of swaddling children, as a child so swathed up can not exercise any of its limbs; and recommended cool bathing, fresh air, simple diet, and a costume permitting the freest exercise of the body.

However correct these views are in the main, it would not, as has already been said, be advisable to follow Rousseau absolutely. He is no physician—he even hates physicians; proceeds recklessly, and often blindly, after his Huron ideal; and is determined, either by bending or breaking, to harden the French children.*

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* *Gellius had already* (12, 1,) laid down the same principles; as had Ernesti after him.

The little work of the able physician, Hufeland, on the contrary, his "*Good Advice to Mothers, on the Physical Education of their Children,*" is highly to be recommended. Intelligent mothers may safely follow his advice, particularly as to diet, where so many go astray. According to Hufeland, coffee and tea are altogether unnecessary to children; he prohibits the usual overwhelming of children in thick, soft feather-beds, and their sleeping in heated, unventilated rooms; recommending, instead, the utmost cleanliness, and especially what he calls air and water-baths.

Children do not give information; we do not see into the quiet and hidden secrets of their existence. In instruction, the most helpless scholar will receive the most assistance from the intelligent teacher. But we often have to stand in doubt and irresolution by the cradle, and to recommend our child to the care of its angel in heaven. I have known farmers' wives, who permitted their children to play in the street, without any care. And if any one drew their attention to the danger, they would say, "My child is not three years old yet—the angels take care of those." Their idea, probably, was that after the third year, when the child is more active and intelligent, it can take care of itself.

But, although the inner life of the child is a secret to us, we may be confident that its mind is no vacant space, but a place consecrated by baptism, in which are slumbering the seeds of divine gifts, which shall develop with advancing years. But let it not be imagined that the mother can do nothing for the child in the first years of its life, except in the mere matter of physical care. Is the heartfelt love which inspires this care nothing? Who knows whether it is not this love which implants the first seeds of the answering love in the child's heart? Shall, then, the dependence of little children upon their mother be only animal and selfish? Who can tell how much influence the beautiful cradle-songs of the mother have upon the child? And, above all, we believe that the intercession of the parents brings a blessing.

With the acquisition of speech, begins a new course of life for the child; and it comes out of its mysterious isolation. Learning to speak is connected with learning to walk;† and these two comprehend the first elementary instruction of a child. I anticipate the question, what reason is there why children should be born dumb, and require almost a year before they can speak a word? It is because they must needs awake gradually from their deep, nine months' embryonic slumber. Light awakens the eyes, sound the ears, and in this way the senses become active, and of themselves receive impressions from the world around. This is the beginning of living, and of experience. It is when the child's impressions mature into ideas that there arises within him the need of expressing himself; words are the ripe fruit of childish experience.[*] It is provided that the attempt to speak shall not be made too soon, by the original influence of the organ of speech. If this is overcome, there is in most cases an end of a judicious course of learning language. Such children misuse the treasure of language, which others have laid up; and, as if ornamenting themselves with the feathers of others, they allow their thinking and speaking to be done for them.

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* For instance, Rousseau rejects Locke's admonition never to permit a child, when heated, to lie down on damp ground, or to drink cold drink.

† First, to creep. This strengthens both arms and legs. A child who learns to creep well will, as he begins to go upright, and often falls down in trying, usually come down on his hands and arms, which he has learued to use. Children who have not crept fall more awk-

Learning to speak is, in part, a mental process, and partly bodily. The latter portion of it is concerned with the training of the originally awkward organs of speech. Children themselves take pleasure in this practice, and very often say and repeat words and phrases for the sake of speaking. Their ears learn gradually to apprehend more accurately and fully the words pronounced before them, and thus they become able to pronounce them better.[†]

The mental labor of the child in learning language consists in the correct comprehension and experience of the thing to be expressed, and in the memory of the right word for it. Without any stiff, schoolmaster-like, incessant pronouncing over before him, the child observes for himself the names of things by repeatedly seeing the same things always called by the same names; cherries, for instance, always called cherries. In the same manner, he learns from grown persons words and phrases to express his inward impulses; his wishes, desires, pain, pleasure, &c.[‡]

The ideal to be pursued in the child's first learning to speak, is the same which should remain such all his life as a man; namely, truth; adequacy; the fullest correspondence of the thing to be expressed with that which is expressed; of the inner seeing, feeling, thinking, with the verbal language. To such a correspondence and truth we

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wardly and dangerously. And still how hasty are parents in hurrying their children onward, and forcing them to walk without having crept!

[*] J. M. Gesner says: "The Greeks have a most valuable word, *logos*, with a broad significance. For it may mean either *reason* or *speech*. When the word has ripened within, then it can be spoken out. The child does not learn to speak like a parrot; it is no organized echo to return what is spoken to it. At least, it ought never to be taught, by the incessant *chattering of nurses*, &c., parrot-like habits of imitating such chattering."

[†] *See the chapter* on the training of the senses. [‡] See Augustin's Confessions, Lib. I., 6, 8.

should educate the child; it is this quality which characterizes the greatest poets, orators, and philosophers.

The mother usually gives the first elementary instruction in language, and may commonly be expected, proceeding in a natural manner, and with sure instinctive tact, to do what is right; while the subsequent instruction in language, by teachers who boast of using the best methods, is very often extremely fantastic, and well calculated to defile, or entirely to dry up, the deep and living sources of human language. Let him who desires to instruct mothers in this thing be cautious; let Pestalozzi's "*Book for Mothers*" be a warning example to him. Instead of intelligent mothers, eagerly, freely, and delightedly teaching their beloved children to talk, as opportunity serves, we shall have, by means of these methodologists, stiff, wooden schoolmistresses, giving methodical lessons in language to children one year old, every day at a fixed time.*

It might almost be believed that unrhythmic language is not for children, but song; which passes so magically into their hearts, and thence into their memories.

Scarcely can children speak, when many parents are at once uneasy to have them learn all sorts of things. A confused idea of education prevails, like a dusky phantom, in our day; to which many parents blindly submit, without examining whether his authority is legitimate. I shall hereafter speak more fully of this tyranny, which must bear the blame when parents induce or force their children to learn to read and write at the earliest possible moment, especially if it is too early.† "Good things take time," says the proverb. The child grows in mind as in body; unpreoccupied and intelligent attention by the teacher is necessary, in order to observe whether he is ready for any particular subject. How few exercise this observation! The farmer might put them to shame, who watches closely to see whether his colt is strong enough to carry saddle and bridle. If he errs, and harnesses him in too early, the beast is worked beyond his strength; and I have with grief known more than one boy broken down by similar untimely and excessive labor. The farmer knows but one mode of bringing his poor beast to his strength again; he looses him, and turns him into the green meadows. I know of no better mode of restoring a boy, so broken down, than a similar vacation in the country.

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* See "*History of Pedagogy*," Vol. II., p. 411, 2d ed. I shall say more on this point when speaking of the so-called intuitional instruction.

† This haste is doubly material in a time when a celebrated pedagogue ventures to praise his widely-known system of instruction in reading, as follows:—"It makes the child conscious of his actions, by observing how he forms one or another letter by his organs of speech:"—it is designed "to direct the children's attention to their actions, by this regulated practice." This beginning is continued by instruction in "logical and æsthetical reading:" in which the reason is every where given "why the reading is to be so and not otherwise," which is called "reading with a distinct consciousness." This method is carried to such an unnatural extent, that any plain woman, who has been made to believe that she ought to teach her children to read in this way, and no other, had better quite give up instructing them at all.

I shall speak in another place of the wretched "thinking method" of teaching language, which is so utterly repugnant to the youthful nature, which dries up the very marrow, destroys the feeling for poetry, and misunderstands and despises all childlike simplicity; deifying, in its stead, a so-called "consciousness," commonly an empty form. Let us hope that the good natural character of the German youth, so hard to extirpate, can maintain a strong opposition to this unreasonable training in self-consideration and self-management, until *their teachers' eyes* shall be opened to their exceedingly unnatural theory and proceeding.

The child therefore must not too soon proceed from hearing to reading, from speaking to writing. He should at first be kept within the region of the living voice (*vox viva.*) In his mother he should love and respect his only source of tales, songs, &c.; she will speak to him in an appropriate style. Even the Bible must, at first, not be read by the child, but must be narrated to him in a free style. Telling and listening form a beautiful bond of affection between mother and child; while, when he begins to learn to read, he often turns his back to his mother, sets himself down in a corner and devours books.

While I must oppose this intellectual hothouse forcing of children, there is another matter which many parents, led astray by Rousseau and his sect, put off far too long. Our pious forefathers used to teach their youngest children to pray, and to know edifying Bible-texts and hymns. A child's heart finds, in prayer, the life of its life; and the deep impression never fades, and consecrates its whole existence, even until death. Yet these illuminati arose, inquiring, What can a child think about the names of God and Christ?—and children's prayers were in many families discontinued.* Would to God that grown persons, with all their so-much-praised "consciousness," were as capable of deep and heartfelt prayer, and of trust in their heavenly father, as children whom a pious mother has taught to pray! But unless grown persons become like children, they can not so pray; and men would destroy even this strength of feeble children!

I shall hereafter discuss the beginnings of various branches of instruction.

INFANT SCHOOLS.

The farmers' wives in a Silesian village, in the year 1817, at the suggestion of an excellent landlord, contrived an agreement that, during harvest-time, when they were busy in the fields, one and another should take turns in remaining in the village and taking care of all the children. The plan was certainly very praiseworthy and intelligent, and to be recommended in all similar cases; *e. g.*, when a number of mothers are occupied in washing or factory labor—in short, wherever there is the same occasion.

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ee *Rousseau* and *Phil*anthropinum, in "*History of Education*," Vol. II., pp. 258, 301.

Though there are many infant schools which did not originate in this necessity, still the idea is closely related to them.

The bond of affection which connects the members of a family is, at the present time, continually slackening. Father, mother, children, each have their own views, and follow their own paths. Every thing which aids in this unfortunate dissolution and scattering of families should be carefully avoided. Pestalozzi felt this deeply. To him the family sitting-room was so holy that he even opposed sending children to school at an early period, and would have the first elementary instruction confided to the mother. It would seem as if the infant schools contemplated the opposite of this, and were school-rooms instead of home-rooms.

Attendance at the infant school by children, whose mothers remain at home and are not obliged to labor elsewhere for their support, should ordinarily not be allowed; certainly not encouraged. I say this of children under six years of age—of those not arrived at school age, and whose mothers would therefore not be expected to instruct them, but only to give them maternal care and protection. To whom else, in God's name, than mothers should that duty be intrusted; and who would venture to perform it, uncalled?

Such are my views; and I hope that they will, in general, be accepted. Still I must confess with pain that, at the present day, the exceptions to the rule increase. Our day is a day of succedanea. A succedaneum, accordingly, must be had for a large class of mothers; especially for unnatural mothers. But it may be objected, where is the use of saying that mothers ought to be so and so, and of turning away from what is actually practicable? When so many mothers fulfill their maternal duties so ill that they rather injure their children in all ways, shall not every one, in whom there remains one spark of Christian sympathy, lay hold and save all that can be saved? Shall we not at least bring these poor children, for a few hours daily, into a better and purer physical and intellectual atmosphere, so as to give them more strength to resist a corrupted atmosphere for the rest of the time? Will not such a mode of proceeding perhaps afford the means of acting upon the mothers themselves, and of bringing them into a better way?

Who could oppose to such applications of the principles of love a mere stiff adherence to what ought to be? Only so far would we adhere strictly to principles and rules, especially the fundamental laws of divine and human order, as to avoid the danger of becoming so estranged from them and accustomed to our substitutes as at last to think these absolutely right. We would rather use all possible means to aid in re-establishing those ancient and obsolete laws, and a pious and honorable family life.

There is a second thought, which I can not avoid expressing; it relates to the mode in which the unhappy condition of these children is to be remedied. The problem is one of the most difficult of the art of education; and but few men have the gifts which enable them to pass many hours a day with a crowd of little children in a natural, childlike manner, without affected childishness, and to do the right thing every moment, with assured tact, and without uncertain and uneasy meddling.

But what are the consequences of failure in this direction? I may be excused if, at the risk of going too far, I present a sketch of the errors which in such a case are probable, and which have sometimes actually happened.

Children not yet of school age are collected together in a schoolroom. If they were taken into an inclosed meadow in the woods, where they could play at making sand-houses, their instructor would have scarcely any thing to do except to keep an eye upon their lively, unwearied, and mostly innocent fancies; indeed, he would scarcely have any thing at all to do.

What a task is it, on the other hand, to preserve from weariness, to oversee and govern a crowd of children shut up together in a room! A mother can often scarcely get along with only four or five children; and has to require the help of the older ones.

A method has unfortunately been invented of meeting the exigency; but how? The poor children, who would otherwise have enjoyed a vacation up to their sixth year, and thus would have suffered no weariness, have to sit still on benches and at desks, and study. Although it may be said that this is only an introduction to the school, it is nevertheless itself a school. When a good mother at home repeats or sings a stanza to her children until they can say it or sing it after her, this is harmless private teaching and learning. But how different is the proceedings in such schools where a multitude of little children learn, repeat, and sing by rote and simultaneously!

Many teachers suppose that they must drill the children in order to bring them forward. Invisible, quiet development is indifferent to them. And even if we confess that the same indifference apparently prevails here and there in the public which supports such schools, still they will see the fruits of their support of them, even if these are apples of Sodom—rosy outside, but within dead ashes. Woe to those teachers who only endeavor to make a show of these little ones, and in them of their own skill; who aim to make them, at public examinations, or even before any visitors, sing, declaim, and even pray with theatrical and affected manner, at their age so unnatural *and repulsive!* Thus is instilled into these lamentable little creatures a poison which remains with them all their lives; an utterly unfeeling and hateful vanity. Thus are produced children who take no pleasure in verses and stories, but only in the praises which they can obtain by telling them with acquired and drilled naturalness; who are rolling their eyes about even while they are praying before the company; while the last trace is gone from them of that devotion which a pious child feels when his pious mother hears him repeat his evening prayer, before he goes to sleep in his little chamber.

It would be better than this even to have the children grow up in the streets and squares, in sight of the whole city.

I ask excuse for the foregoing. It may be considered as a caricature, drawn by way of warning. Yet it is certain that its features were not composed from imagination.

It is, I repeat, a difficult task to conduct an infant school. Aside from the numerous external difficulties, the place requires men who, besides great christian humility, and heartfelt love for children, do what is right and true in all simplicity, hate pretense, and without being led astray by experiments and controversies will walk and act as quietly and unobtrusively as possible, conscientiously, and as if in the sight of God.

The Lord has already sent many pious laborers, who are working unweariedly in the field. He will carry forward the work of his hands. He has pronounced heavy curses against those who offend children; and will give blessings equally great to those who save their souls from death. The mistakes, errors, and even faults, which have appeared in various places, should not betray us into looking only at the dark side of these institutions; although we would not shut our eyes to their faults; since we desire that they should be recognized and cured, and that this important work may from day to day become purer and more pleasing to God.

SCHOOL AND HOME.

The child attains the school age in his sixth or seventh year; at which time new relations arise, namely, those between the child and the parent on one side, and the teacher on the other. Hitherto his parents' house has been the central point of the child's existence; now it is the school. Education is the object at home, and instruction at school.

In simple communities, the father can be the teacher of his boys; especially when the latter are brought up in and for the father's calling. But if the son does not follow that calling, or if the extent of the matters to be learned is larger, or if those matters have little or nothing in common with the occupation of the father, the teacher becomes a necessity. Thus there comes to exist a special class of teachers, as by the progress of division of labor the various other professions and occupations have been originated.

Of the teacher is required a definite amount of knowledge and skill, a thorough acquaintance with certain sciences and arts, and particularly a mastery of the art of teaching—the art of awakening in the young the love of these arts and sciences, and of communicating them to them.

The relations between the parents and the teacher are most important; as a constant co-operation is necessary. The father should ask the teacher, How does my son go on at school? and the teacher again should ask the father, How does he conduct at home? Thus will be established the most healthy species of influence; which will bring the boys, particularly the insubordinate ones and the real good-for-nothings, between two fires.

Parents and teachers must treat each other with respect, especially before the children. In no case should either of them speak criticisingly, contemptuously, or inimically of the other, before them. Great errors are committed in this particular by injudicious parents, who treat the teacher like a hired servant, who is bound to govern himself by their views—usually narrow—and prejudices. They find fault in the presence of the children with the instruction or the strict discipline of the teacher, and even say that the tuition-fee is altogether too large. Will the children obey, respect, and love persons of whom, and even to whom, such things are said?

My own parents impressed upon their children unconditional love and respect for their teacher. But my father once violated his own rule in an instance apparently quite unimportant. He found fault in my presence with the mode in which my teacher made pens. This trifling blame made me for the first time entertain doubts of my teacher's perfection.

ALUMNEA.—PRIVATE INSTITUTIONS.

Elementary instruction is provided for, in every village of moderate size, by a common school. Small towns have also schools in which the rudiments of Latin are taught; but only the large towns have gymnasia, which afford a complete preparation for the university. It is therefore only in the large towns that the relation which we have sketched between school and house can continue while the boys are receiving the higher grade of school instruction. Many fathers of families, as for instance landed proprietors and clergymen, live in the country, or at small villages; how are such to secure for their children, if destined to a course of learned study, the higher gymnasium *instruction?* To secure it, I say, because cases are so unusual where such a father himself affords the whole course of school instruction, from the elementary up to entrance into the university, as scarcely to need notice. Where they do not do this, however, they must either send away their son to the place where the gymnasium is established, or must place him at a private establishment, or must employ a tutor at home.

In the former of these cases, it has always been a great evil that the father usually finds it difficult to obtain a good place of abode for his son, and to find a man who will receive him into his family as if one of his own children, and exercise a like conscientious care over his education. It is besides also beyond the parents' means to pay the expenses of their children's board.

To obviate this difficulty, there have been established, at many gymnasia, *Alumnea*, in which children from other places live together under supervision; and the establishment of the Saxon and Wirtemberg cloister-schools was for the same purpose. The mode of life in these Alumnea was very different from the previous life of the boys at home; indeed, there was no distinct aim to supply the place of family life. There was wanting, above all, a housewife—a house-mother. The liberty of the Alumnists was much circumscribed of necessity, on account of their number. In the Alumneum of the Joachimsthal Gymnasium, at Berlin, where the author was an Alumnus from 1798 to 1801, no pupil might leave the house for more than a quarter of an hour without a written permission, signed by the inspector, which he presented to the door-keeper. We were awakened at a fixed time, and the lights were to be extinguished at a fixed time. Every thing had the character of the discipline of a strict father; a character no longer in agreement with our freedom-loving age. I do not wish to be understood that there was no opposition among the Alumnists to this strictness, nor that there were not manifold evasions of the legal regulations.

The instruction, like the discipline, was mostly on the ancient plan. If any thing new was introduced at any time, with cautious selection, it was done as quietly as possible, so that we scholars scarcely observed it; there was not the remotest, slightest approach to innovation or charlatanry.

The private institutions for education were precisely the opposite of the Alumnea. They have mostly risen up in Germany and Switzerland, within the last seventy years, since the establishment of the Dessau Philanthropinum. This institution sought new objects, opposite in nature to the old, and thus came in conflict with the schools already existing, which adhered to the old plan. After this time, any one who desired to promote the new system was obliged to seek to do it either at his own risk, by establishing a private institution, or by joining himself to one already existing under it; and parents of the same views placed their children at such an institute, and supported it by their payments for tuition.

It is not to be denied that the old-fashioned schools were conservative in excess, and even to obstinacy; and that they often rejected any thing new, even when it was good. Many private institutions made a beneficial opposition to this excessive tenacity. They experimented with devotion to the cause of progress, and the results were of service to the old-fashioned schools, which imitated their success and avoided their failures. Many private institutions might be named, which in this manner exercised a most healthful influence. Others of them are enterprises which are entitled to gratitude, because they took the place of public schools which had disappeared, and disappeared as soon as they resumed their places. Many of them were called cities of refuge for orphan children, and others whose own faults or other means had brought into a necessitous condition. Such is the bright side of the private institutions; let us now look at their dark side.

If the old-fashioned schools were too conservative, the private institutions showed themselves to be, on the other hand, too progressive; inclined to innovation. This was clearly exemplified in the case of the Philanthropinum; which despised the wisdom of previous centuries, and proposed to fashion all things anew. They pulled up wheat and tares together. This fault, it is true, many modest and judicious principals endeavored to shun. But such teachers, by trying to satisfy the excessive requirements both of the old and new periods, only overworked themselves and their pupils, in their endeavor to accomplish impossibilities, without being thanked for it. It is evident how much such experimenting must have injured the pupils intrusted to them.

The private institutions were designed to identify the school and the house. The school assimilated itself to the family life, and brought the latter under its roof; the principal, who received the boarders into his family, representing both the teacher and the father of the family. Thus wielding the double scepter of school and home, it was thought that he could not fail, as every thing was under his hand, to conduct every thing without any divisions, and in unity of spirit.

But this was an error. He represented the father of a family, but was not it; and, in like manner, he only represented the rector of the school, without really being such.

t is easy to explain why he was not actually the father of such a family. The very number of the children rendered a domestic and affectionate family life impossible, even though the director should have the services of the most conscientious, industrious, and kind-hearted of housekeepers. Nor can the director, even with the utmost good will, embrace each child separately in his affections; he must manage them as a body, and what father manages his children as a body?

And though he were able to embrace them all in his heart, still that is not the heart of a father; even granting him the utmost good will, it is only a substitute for the love which God plants in the heart of a father. And the children, collected from the most various families, are doubly destitute of childish love for the director. They feel themselves as it were in exile—banished from their parents' houses; and they compare their present life with their previous life at home, finding nothing right, and every thing hateful and oppressive. And even if they become gradually accustomed, their liking remains but lukewarm, and it is only seldom that they acquire a real love for the new state of things, and then their previous condition must have been quite bad.

Private schools, moreover, are frequently under the necessity of receiving pupils who do well nowhere; or who are excluded from other schools for deficiency in intellect. And, although parents and guardians ought to describe the children they bring just as they are—as worthless or ignorant if they are so—yet the contrary practice prevails, and they are silent about their faults and conceal them, especially their secret ones; and, after all, they charge the institution with all the ignorance and badness of their children. It is well-advised, therefore, that pupils, at entering, should be examined in the presence of their parents, that the results should be set down in a protocol, and the protocol signed by the parent or guardian.

It is a common delusion that the director of a private school is free; having no authorities to limit him and prescribe laws to him. Instead of school authorities, who may honorably be obeyed, there are many parents and guardians who take upon themselves to prescribe, in all possible matters, to the director what and how he shall teach, how his table shall be managed, &c. Woe to him, if he promises to comply with every thing; if he lacks the necessary judgment and firmness to meet all these requirements in a proper manner.

These assumptions have usually a very vulgar origin; namely, the idea that the instructor depends upon their favor, as if they were his official superiors. If he does not obey them, they threaten to take away their children.* And they tell them, even in the teacher's presence, to be very industrious, because they cost so much money. Such admonitions naturally make the children think that the teacher is supported by them, and can not exist without them. Is that the position of a father of a family?

Want of a capital to begin upon, and dependence upon payments for board, has a bad influence upon private teachers. One who desires a permanent situation prefers a place in a public school to one in a private institution. The latter affords no certain support, and he can not think of marrying in reliance upon it. And even if his income is sufficient on one day, what assures him, with his sliding-scale of boarders, that it will be sufficient to-morrow? The consequence is, that in the private institutions we usually find only young teachers, who have just come from the university. These make experiment of their gift for teaching upon the pupils. As soon as they ascertain that their ability is good, they begin to desire some position elsewhere, which will assure them a certain income. In this only the more incapable teachers are usually disappointed, and thus they remain for years burdens upon the schools; while the abler ones find situations. Thus there is almost never established, in a private institution, a corps of teachers with the skill of years of practice and experience. But it is not only the desire of a sure maintenance which drives off the teachers; there is a second reason—the almost intolerable burden of labor. The gymnasium teacher has the time of his evenings to himself, as soon as the regular school-hours are over; but not so with the teachers in a private school. He must continue his supervision of the boys at table, at play, and even through the night, if he sleeps with them. He has no time to breathe; and one can scarcely endure such a burden, unless he has a not overscrupulous conscience. The principal is worst tormented of all. Besides instruction and supervision, he has many other duties: correspondence with the parents, the housekeeping management, the general care of the whole institution, &c. And these burdens are doubly oppressive because he is not governing in the strength of an official appointment. And such a man, beset day and night, is expected at the same time to be a cheerful, friendly, loving father to a multitude of strangers' children, and to maintain the tone and atmosphere of a pleasant family life!

He is even expected to do more than this. He is expected to be rector, and to maintain discipline among the mass of children. Thus he has two inconsistent occupations, and this inconsistency—that of family life and school discipline—runs through the whole institution. If the former is the prevailing element, the strict discipline and order, which are so healthful and beneficial to the child, suffer; and if the latter, there is from morning to night a stiff regulation-movement to play, meals, sleep; every thing has the impress of the rules upon it. This is intolerable to intelligent and active boys; and they try to get free air for themselves by constant opposition to the incessant pressure of the stupifying legal code. And this very opposition often causes the teacher to still greater strictness.

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* An honorable and conscientious teacher must meet these vulgar assumptions with the most distinct *sint ut sunt aut non sint*—things must be as they are, or not at all—at the risk [illegible] his school entirely deserted.

Thus there is a vacillation between a corporeal despotism, which would assimilate the school to a barrack, and a so-called family life, which would resolve itself into lawless anarchy.

Having thus displayed the dark side of the private schools, I gladly turn once more to the other.

It should first be observed that it would be very unjust to charge that all parents and guardians of pupils at such schools are such as have been described. At all the institutions which have been known by me, there have always been fathers, mothers, and guardians, who have been sincerely thankful for every thing which has been for the good of their children. And there were also many among the children, who felt and recognized the honest and disinterested exertions of the teacher for them. And even those to whom their life at the institution was not pleasant, often in after years sincerely thanked the teachers for what they had done for them.

Intelligent parents and good children influence the others, and strengthen the teacher in his difficult calling. Such parents are far from entertaining that foolish notion that the teacher, in return for their tuition-fee, is their servant, and must fall in with their wishes in every thing.

If the teachers of a private school are respectable men, free from interested motives, kind and conscientious, and if the parents of the children are liberal-minded, and place full confidence in such teachers, many of the evils which we have described will disappear. The pupils, after the example of their parents, will confide in the teachers, and good feeling will prevail in the school.

TUTORS.

Parents who love their children sincerely find it very hard, at so early an age, and under such circumstances as have been described, to send their children away from them, and to intrust them to an Alumneum or a private institution. They have remaining, in such a case, the alternative of employing a private tutor, who shall educate their children jointly with them, and who shall have entire charge of the department of instruction, and thus supply the place of the school. This is the business of the tutor in the country; in the city, however, he will usually have charge only of the supervision and education of the boys, who will attend some school, receiving additional private lessons.

To consider more in detail the task of the tutor. And, firstly, as to instruction: the duties of the city tutor are in this respect much the lightest; as he will have only to supervise the boys during their studies at home, and to assist them wherever necessary. In this position it is difficult always to observe a proper medium, so as to avoid—if a somewhat colloquial form of expression may be admitted—making a personified asses' bridge of one's self. If the study of self-taught persons is often an oppressively severe task, that of the scholar, who is always assisted, is too easy. By always depending upon external aid, he loses the right control of his faculties, which alone will bring him to a proper independence.

The country tutor must instruct in all studies; he must be a whole school in himself. He must understand and be able to practice whatever he is to teach; and he must do still more. Even a master of any subject does not thereby become a master in teaching it; many virtuosos might be named, who could not teach their science or art.

It may be said that, as the art of swimming must be learned by swimming, so the art of teaching must be taught by teaching. This is very true; but still, each of these arts has rules and modes of operating, a knowledge of which can be acquired before proceeding to the practice of them, although the right understanding and practical knowledge of them is only to be acquired by actual practice.

Candidates in theology and philology are usually tutors. They have seldom, while at the university, made any special preparation for the place, and do not know what its difficulties are. They frequently imagine that, because they can read and reckon, they can teach both of those studies; and even delude themselves as to the clearness and certainty of their knowledge and ability in them. Experience is necessary before one can know how teaching brings the teacher to the right estimation of his knowledge; that is, how it cures him of an overestimate of it, and humbles him.

Most of what is to be taught, it will be necessary not merely to be practically master of, nor scientifically to understand, but both. The teacher must conjoin clear theoretical knowledge and practical skill. An apparently ready arithmetician undertook, rashly, to teach the rudiments of arithmetic. He soon found out, for the first time, that he was destitute of any true knowledge of the essentials of the four ground rules, especially of division; and thus convinced himself that *he could not teach* properly without that knowledge.

If the tutor is likely to make such a discovery as this on subjects which he has diligently studied at school and university, the case will be still worse when he undertakes to instruct on subjects which he has studied and practiced only superficially, or not at all. Such are drawing, singing, piano-playing, gymnastics, geography, and natural history; departments of especial importance for a teacher in the country.*

Any person, therefore, who is proposing to become a tutor, should use the opportunities afforded him at the university to ground himself more thoroughly, and increase his readiness in the studies which he pursued at school, and to learn also much more. And even if the theological student has no design of becoming a tutor, he should have a reason for such a course of study, aside from the noble motive of self-cultivation. If he afterward becomes a pastor, he will commonly have the supervision of a country or city school. In this event he must become acquainted with the subjects and the method of school instruction; in order to which, he needs to prepare himself almost in the same manner as for a place as tutor. The fact that this has always been neglected by the great majority of theological students has done much to promote the unhappy division between church and school. Teachers feel it to be unjust that they are under the supervision of clergymen who have made themselves acquainted neither with the theory nor the practice of teaching, while they themselves have labored assiduously for years in preparing themselves for their vocation. I am aware that many teachers protest against subordination to the clergy from quite other and improper motives; but they are right in demanding of the school-inspector an acquaintance with the subjects and methods of school instruction.

But to return to the subject of the tutor. In the country, he must teach, singly, what all the teachers of a school teach together. To make up for this great field of subjects of instruction, he has been encouraged by the consideration that, to compensate for it, he has fewer children, perhaps but one or two, to instruct. But this is a poor comfort. It is true that to instruct a class of seventy or a hundred scholars is a task to which no one ever felt himself competent who was seriously desirous of teaching, in the true sense of the word. But an opposite extreme brings with it an opposite disadvantage to the teacher. This is, that nothing could be more irksome than to sit six or eight hours daily opposite two pupils, and to instruct them without cessation. The case is the same as in gymnastics. What would the teacher of gymnastics do if his class at leaping, for instance, consisted of only one or two? He can not keep these two jumping incessantly; they would very soon be exhausted. But, if he has a class of fifteen, each, after his exercise, rests and looks on at fourteen others before his own turn comes again.

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* The study of French is especially to be recommended to those who would oppose the excessive valuation of this language; so that it need not be said that they can not judge of it, *because they do not understand it.*

The case is generally similar in mental training. Suppose a class of fifteen are studying the Æneid. The scholar who is reciting has to make a much greater mental effort than the rest; but, when he is through, he only listens while the other fourteen recite, until his turn comes round again. And it is precisely this alternation of the productive and receptive mental activity, in speaking and hearing, which is most profitable to the pupil.

It is, therefore, to be recommended to the tutor that, wherever practicable, he should, when the case requires it, have a few pupils joined with his own, who will certainly gain by it. No parents could object to this plan, except such as consider that, if the tutor should instruct their boy only, his whole powers would act on them; but, if he should teach four others, only one-fifth of them.

It is also said that the tutor has an easy time, as long as the children are quite young—having to give them only elementary instruction. This again is poor consolation; for this is the most difficult instruction to give. It is certainly more difficult to communicate the right rudiments, in the right way, of arithmetic, Latin, &c., than to study algebra and read Cicero *De Officiis* with a boy of fifteen, already practiced in them.

Having thus considered the task of the tutor in respect to instruction, let us look at his duties in disciplining.

In instruction he is usually unrestricted, and regulates it as he chooses; but he must administer discipline in conjunction with the parents. And the discipline will be successful only when they labor in harmony with him. If this harmony is wanting, the blame is sometimes due to the tutor, sometimes to the parents, sometimes to both.

Until the first employment of a tutor, the parents are usually the only educators of their children. It often happens that the tutor, at first entering upon his office, lays claim to sole authority. This is as much as to tell the parents to their face, You do not understand this affair; let me transact it alone—and this too from a person who has usually not even made an experiment in education. Before he makes such a demand he should have made proof of his capacity by his effect upon the children; and, if he has done this, he will usually not need to make any demand—the authority will fall to him of itself.

This misunderstanding with tutors just beginning their work is especially probable when the tutor is a Christian, and the parents decidedly worldly. In a situation so full of temptations and troubles this, it is extraordinarily difficult to do well by the children in every case, or to carry through, with firmness and mildness, any measure requiring uncommon wisdom. The tutor, in such cases, must be careful not to set up a rigid system, grounded not on God's Word but on his own determination, nor the wearisome, painful, and presumptuous formalities of a false pietism; for the gospel will win no hearts by such measures. A seriousness based on strong faith, which is by no means inconsistent with unconstrained cheerfulness, is not at all repulsive; but the case is very different with that ill-humored frame of mind which is always uneasy, out of temper, and displeased with every thing, and which even by its silence passes sentence of condemnation.

This is one error with which a Christian tutor in a worldly family may fall; the other is gradually to become worldly himself. Especially should he beware of becoming so accustomed to the high style of life in a family of high position that it is a necessity to him, and that afterward he will be utterly miserable in a little village parsonage, always longing for the flesh-pots of Egypt, and for what is called cultivated society. He should, therefore, while employed as tutor, find time to attend upon the sick and the poor, and especially on poor children; in order not to become entirely estranged from the occupations of his future life. If, at the conclusion of his engagement as tutor, his employer should offer to present him the place of clergyman of his village, he should be careful lest he play the part of a mere chaplain and guest of his patron, and neglect the congregation intrusted to his charge.

A Protestant tutor can not easily exert a profound religious influence upon Catholic children. He can not accommodate himself to Catholicism; and, if he does not do this, but gives Protestant religious instruction without regard to consequences, this is in fact nothing but a proselytism which is inconsistent with honesty. The same is true of a Catholic tutor in a Protestant family.

Thus much of the duties of a tutor: I shall pass rapidly over those of the parents. I discuss the points under this head in my chapters on early childhood, religious instruction, relations of parents to public and private teachers, and of training generally. To the remarks offered in those places I will add a few words on the relations of the parents to the tutor.

They must, firstly, be cautious in selecting; but, having selected, according to the best of their conscience and knowledge, they must then put confidence in the employed, and not cramp and discourage him by captious misunderstandings. In general, the tutor will command more and more confidence as he approves himself; and it is a matter of course that he has one or another fault or weak side. But if his fault is not one that entirely unfits him for his office, it must be borne with patiently; and the patience of the tutor will, in like manner, be exercised by the parents. Those parents fare worst who require a perfect tutor; and who try one candidate after another, dismissing them for slight reasons. Such a constant change has a most unfavorable effect on the children.

Parents who employ tutors belong commonly to the educated classes. It ought, therefore, to be a thing of course that they respect the men to whom they intrust the children whom they love, and that they show this respect every where, especially before his pupils. But, unhappily, this is not always the case. Who does not know how often it is the case that the pride of wealth or birth looks down as if from a higher sphere upon the tutor, and considers and treats him little better than a servant? And the children are expected to respect a person thus treated! and a man is to educate them to whom, after the example of their parents, they consider themselves far superior, both in wealth and birth!

Feasting, balls, theaters, and play are the usual diversions of the higher classes. If an intelligent tutor remonstrates plainly against the participation of the children in such dissipations, the parents ought to listen to him, and not to require that both the children and he himself should take part in them.

Thus we have discussed the various difficulties which may arise between the tutor and the parents of his pupils—difficulties, unhappily, only too common. We may now, with propriety, inquire after the ideal of such a relation undisturbed by them. Such a one will exist, where the tutor is a decidedly Christian man, cultivated, fond of children, and master of the art of teaching.

"Well is that house where Jesus Christ
Alone the all in all is thought;
And where, if He should absent be,
All earthly good would be as naught!

"Well, when the husband, wife, and child
In faith and truth are joined as one;
When all accord in earnest zeal
That God's commands shall all be done.

"Well, when before the observant world
They set a good example forth;
And show that where the heart is wrong,
All outward works are nothing worth."

Such a house is built upon a rock; peace dwells within it, and the blessing of God rests upon the children, who are trained up in unison by parents and tutor, in the nurture and admonition of the Lord. And thus also are the right foundations laid of all higher training in science and art.

V. APHORISMS ON TEACHING HISTORY.

[Translated from Raumer's "*History of Pedagogy*," for this American Journal, of Education.]

1. Views on the proper mode of teaching history are exceedingly different, and even contradictory. Such oppositions in other departments of study are usually based upon the discrepancy between the old and new pedagogy; but in the case of history it is not so.

2. First, to define intelligibly the object of our discussion. Shall we teach history, in the widest acceptation of the term—what is called universal history, which treats of all periods and all nations?

Although history, under this name, is taught in most gymnasia, yet neither the instruction in it, nor any one manual of it, corresponds to this idea of it. For what text-book "includes all nations?" Are not the Americans, for instance, usually omitted? as well as most of the African nations, except the Egyptians, Carthaginians, and other nations of northern Africa, who were connected with the Romans? And how large a portion of Asia is altogether neglected!

3. This neglect is for two reasons. One is, that we know either very little or nothing at all of the history of many nations. This is the case respecting those of America. The other is, that we prefer not to know any thing of the history of other nations; or, at least, do not wish the pupils in our schools to be occupied with it. Thus, for example, the Indians and Chinese are scarcely mentioned, though there is no lack of historical authorities on these subjects.

4. But there is also a great distinction between the modes of treating such histories of nations as are included in our histories of the world; inasmuch as in some of them we go into much greater detail than in others. We give less fully the history of the Persians than that of the Greeks; of the Russians than of the English.

5. Universal history, in like manner, as we teach it, does not include all people of all times and countries, and it does not give the same degree of attention to those nations of whom it does treat. By what standard does it proceed in this? Is it according to dignity, so that the more enlightened nations are made more prominent, and those less so left in the background? This is by no means the only rule; for, if it were, the Hindoos, for instance, would fill an im-

portant place in it. For how high a position do they occupy in eloquence, poetry, mathematics, &c.

Why do we give so much attention to the Egyptians, for example, when the Hindoos were certainly not their inferiors?

6. The answer is this. In like manner as individual men take particular interest in the biography of their own ancestors, and of such persons as have exercised much influence upon their own training, employment, or labors, so does each nation take most interest in its own history first, and next in that of those nations which are related to it in language, manners, &c., or which have directly or indirectly exercised a great influence upon it.

7. In the history of what nations should we, as Germans, feel most interest?

First: in that of ourselves. History of our own country, ancient and modern.

Second: in that of the Jews, since salvation is of them, down to the time of Christ, and including the destruction of Jerusalem.

Third: in that of the Romans; to whose *Orbis* our nation formerly belonged, and whose influence is perceptible among us even now. Related studies are Latin, the *Corpus Juris*, history of the Catholic church, &c.

Fourth: in that of the Greeks; whom we recognize as directly or indirectly our instructors.

Fifth: in that of such ancient nations as were in more or less close relations with the Jews, Romans, and Greeks; as the Assyrians, Chaldeans, Persians, Egyptians, Phœnicians, Carthaginians, Arabs, &c. These are, however, not so nearly connected with us as are the Jews, Romans, and Greeks, and they are more distantly related to our character and history.

The history of most of these nations is previous to the time of Christ, and belongs to the ancient period.

The Hindoos and the Chinese have not, within the historical period, been either directly related to the Germans, nor in such close connections with any nation in proximity to us as would enable their influence to reach us through them; and thus, with us, they stand in the background.

Since the time of Christ, Europe forms one Christian whole. Still, the Slavic races are further from us than the Romance ones, or the German ones; not to mention still slighter shades of difference, as, for instance, the fact that, among the Romance nations, the Italians are sensibly more nearly related to us than the Spaniards, and they than the Portuguese.

8. These remarks may furnish a standard by which to adjust the

extent of the attention devoted to each nation in text-books and school lessons; which is the point to which I am to speak. The case is entirely different, when a historical investigator devotes his attention to some obscure national history, without any reference to its relations with his own country, and which is very properly omitted from school studies. For such a student the human race is one; and even those races, whose relationship to and connection with our own is hidden in the darkness of times long forgotten, come gradually astonishingly near to us. How unmistakably, for instance, does a comparison of Sanscrit with German point to a primeval unity of the German and Hindoo races.

9. After the object of historical instruction is determined—that is, what is to be taught—the question arises, How are we to set about instructing; what is to be our method? In this respect, also, is there the greatest variety of opinions among instructors.

In the first place, there is an opposition similar to that in the case of geography. The beginning may be made, that is, either with general or with particular subjects. In geography, for example, one begins with discussing and describing the whole surface of the earth; while another commences, as old Merian did, with describing single towns.

10. Thus, in history, a beginning may be made either with a sketch, of the most generalized kind, of the history of the world—we have seen what is to be understood by the history of the world—or with biographies of individual men.

Of these two extremes the first naturally induces the second. "What can boys do," ask some, with general history? They will learn names and dates of years, and nothing more. Where the scope of the subject is so great, the matters which are of most importance to youth, such as vivid portraits of individuals, great men, instructive occurrences, &c., can not be properly considered. We would, therefore, begin with the biographies of Alexander, Cæsar, Mohammed, &c.; and this method must certainly be more agreeable to the young than the general historical method.

To this the opponents of this method would reply:—"Did these heroes, whom you would describe, live as isolated appearances, in an age otherwise empty? Did not each of them belong to his nation? Can I comprehend Cæsar without knowing the Romans; or the Romans, without knowing the Greeks and Carthaginians? Shall I not therefore be obliged, in order to delineate my hero, to describe his nation; and indeed all the nations which were in close connection with it? And does not this, of course, bring us to the method of general history?"

I do not subscribe to either of these conflicting views: each of the parties seems to me, however, to be right in its objections to the other.

11. In late years there have been those who have maintained that we ought to begin the instruction in history with that of the native country; since that is nearer to us than Greece, Rome, &c. This view seems at first so simple and natural that it attracts us; but, upon closer consideration, one who is moderately acquainted with the history of Germany would be slow to adopt it. Are not the most important periods of German history—such, for instance, as the mediæval contest between the popes and the emperors—of a character far too difficult for the intellects of boys? Do they not require, for even a moderate understanding of them, a comprehension of the science of church and state, and of their mutual relations? And other equally significant questions might be asked; as, for example, whether a boy of from ten to twelve years old is capable of understanding the movements of the Reformation?

12. I now turn from methods which I do not approve to the consideration of those which I consider correct.

The first beginning of historical instruction is, in part, coincident with religious instruction. Christ stands upon the bounds which separate ancient and modern history. Ancient history is related to him, lives in him; and he is the creator of the modern period, and will remain with us until the end of the world.

In this department we first become acquainted with the evangelists—the history of Christ—and thus acquire the capacity to learn aright, both in ancient history and modern, whither the former tended and whither the latter is tending.

Historical instruction proper I would commence with the Old Testament. My reasons are these:—*

1. Because the Old Testament history does not begin arbitrarily at any particular period, but at the beginning—the Creation.

2. Because this history is at once so simple and so vividly graphic. The persons and scenes of the Old Testament impress themselves involuntarily upon the mind. Its descriptions and narratives excite the children's imaginations to the forming of mental pictures, which remain in their minds, instead of merely passing through their memories, like mere names which have no actual existence. The Bible does eminently well what is required by the adherents of the biographical method of studying history.

3. Because the history of the Jews is a remarkably individualized one. It is the history of the people of God, chosen out and set apart

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* *It should* be understood that, for the purpose of historical instruction, many parts of the *Old Testament should* be omitted, and left to be read at a maturer age.

from the heathen; and for this very reason it is more intelligible when separate from others—not incessantly referring to foreign nations, whose existence connects itself with its own, and thus requires some full knowledge of their history. This makes the mastery of it much more simple, and enables the attention to be directed, without divergence or confusion, to this one nation exclusively. This limitation of the subject is excellently adapted to the dimensions of the minds of school-children.

4. Because the history of the Jews is a theocratical one, in which the finger of God is visibly seen. God, to whom all his works are known from the beginning, the educator of the human race, often withdraws himself from sight in the history of other nations, as if he had given men over to themselves; and it is a characteristic of profound historical research and knowledge to look beyond the accidents of the time, and to recognize the justice of God ruling over the nations and over individuals. In the history of the Jews, on the contrary, the divine punishment follows sin, as the thunder does the lightning; while the blessings of the just—as in the case of David—fall visibly upon him and his posterity.

5. Because the Old Testament history not only reveals the true God in his justice, but also in his infinite mercy. While it relates the origin of sin, and with sacred impartiality reveals the sins even of men of God, yet it is a book of encouragement and of hope; because it every where points toward the coming Saviour.

Such a history furnishes the first point of view from which correctly to understand and estimate the history of other nations. It is the foundation—and even more, it is the living heart—of the history of the world. As Palestine was a land most isolated in situation, yet admirably adapted to become related to the Roman world, so the ancient Jewish history is a most individualized and isolated one, and yet contains within itself a living energy which enables it, at the epoch of Christ, to open out into a most comprehensive history of the world.

With the Old Testament are connected the histories of the Assyrians, Chaldeans, Medes, Persians, and Egyptians; for which, indeed, the Bible itself is one of the authorities. Daniel refers to Alexander the Great. The Apocrypha, with Josephus, fills up the gap between the return from exile and the time of Christ. And at this last point the history of the Greeks and Romans joins on to that of the Jews.

13. We now come to a point of divergence. Hitherto, history, entirely biblical, has been the same for all Christian children; but here there arise distinctions, depending on condition and sex.

Boys will either study for a learned profession, or not. The former study Greek and Latin, and can and must be introduced to the sources of Greek and Roman history. These sources include not merely the historians, but all the classic authors; for they all characterize their nations.

Now, should the boys be carried through a detailed history of both the classic nations, omitting the classic authors, before they read the latter? By no means; but still they should study a brief outline of it, with reference to the future reading of the classics. This outline will serve to fix correctly their ideas in chronology, just as their previous geographical studies have done in space. But it is not intended that this portion of study should be completed during their attendance at the gymnasium.

The case is different with boys of the higher ranks, who will not study a profession, and with girls. These may study a more detailed history; since nothing can be left for a subsequent reading of the classics. But this history must still be written throughout in an easy and popular style, and must not demand any previously acquired learning in order to its comprehension. Both Greek and Roman history must be presented in their relations to the kingdom of God; and the opposite characters of heathenism and Christianity must be presented. A description of the Roman Empire at the time of Christ is of special importance.

14. We now come to modern history. Roman history forms the transition to it, belonging as it does to both ancient and modern times. Boys preparing for the university may study, for this, Tacitus; but not the writers on the Augustan period. At about the epoch of the Antonines begins a period, the original authorities on which are scarcely studied except by professional historians. How few are there who read Cassiodorus, Jornandes, the Byzantine historians, the Latin writers of the middle ages; how many, indeed, even understand the older and middle-age High German?

At this point, it will be said, come in the eminent modern historians.

I can not refer, for this purpose, to classic writers generally, as I did for ancient history. One reason for this is, that only a few among the modern writers are really able; and among these there are few, again, whose treatment of history is not quite beyond the capacity of youth. Such a one is Spittler, for example. A second reason is, that to read Herodotus and Sallust is an actual intellectual labor for the pupil; he is obliged to pay earnest attention to the course of the history to master his tasks. And it is only too commonly, on the other hand, that young persons read the *German historians* merely for amusement, very much as they seek after romances, to pass away the time in indulging their imaginations.

The teacher, I say, should not refer to the modern historians as he does to the ancient ones; especially, not as if they were soon to be read in school. By this I do not mean that he should proceed as if they did not exist; he should give his pupils a sketch of modern history, as of ancient, with reference to the fact that they will sooner or later read the good German historians, and perhaps the English ones. This sketch should be fullest of our own history; and more or less so of the other European nations, according as they are nearer to or further from us, or have more or less interest for us.

15. The question will arise, How many facts, &c., should the pupil fix in his memory? I reply, first, Rather too few than too many. That is a very great error, into which teachers of history fall, of often laying upon their pupils burthens which they themselves could not endure. Instead of selecting remarkable men and occurrences, and giving the proper dates of them to be memorized, they torment the boys with a mass of minutiæ "for future oblivion;" that is, which they will forget as soon as they leave the class. There is no better means than this for inspiring them with a most thorough disgust for history, and one from which they can afterward scarcely free themselves.

The opposite extreme from this cramming process must, however, be avoided—of being too kind to the boys, so as to make them inefficient and afraid of labor. There are teachers so tender of the boys that they are reluctant to make them commit to memory the multiplication table. Every one knows how easily the memory of the young receives and retains facts, names, and dates, unless, indeed, an unwise teacher has broken it down by unreasonable burdens or entire neglect. It is well known that, when this has happened, the sufferer, when grown up, can only with difficulty, or not at all, repair the damage thus inflicted. But we are in after years thankful to our instructors in history, if we retain from their lessons as much even as the succession of the German emperors and the length of their reigns; and are thus enabled so to measure our own historical studies as that we can proceed in them without having our mental processes interrupted by defects of recollection.

16. The more thought is bestowed upon the plan for historical instruction to be pursued in our schools, the more difficult will it appear to lay down any universal rules on the subject. And these rules should, in any event, be only of a most generalized character; and not such as to bind down the teacher to any course of details. The reason of this chief rule is, that historical instruction is eminently dependent upon the personal gifts of the teacher. Shall he, for in-

stance, make much or little use of a free, narrative method? Should he not rather select extracts from historians and read them? I reply, This depends upon whether the teacher has the talent of narrating—a very uncommon one. It supposes not only a man of historical knowledge, but the gift of narrating historical facts simply, lucidly, orderly, and fluently, without error or hesitation. And it also requires, above all, a clear and sensible mind, heartily despising that mere declamation for effect, which is only too often made a cloak for ignorance, and is well adapted to destroy at once the scholar's taste and his sense of truth.

If the teacher is skillful and conscientious, as few rules as possible should be prescribed to him, and it would be better to have none at all; for no one can properly claim to understand teaching better than the teacher himself, whose mind has been expressly trained and practiced in his calling as its proper field of labor. Such prescribed rules must, at best, be able to restrain mediocre and bad instructors from ruining their scholars entirely. If unskillfully made, they constrain and confine the best teachers.

17. We have very many text-books of history, from the briefest compends up to voluminous and detailed works.

The former are intended for school use; and furnish very brief, condensed sketches, which are to be filled out and made vivid by the teacher's oral instructions. The pupil, during his study, obtains from them the subjects which are to come up during instruction; and the manual serves, by means of recitation from it, as an aid to the memory, as the short entries in a memorandum-book do. These compends may be even without any style at all—in a tabular form.

Other compends pretend to possess a good and readable style, and that no additional oral matter from the teacher is necessary. They are calculated to assist persons studying without teachers, without any other aid. They claim, notwithstanding, to be compends; although, as a general rule, they embarrass the teacher who uses them, because they deprive him of the most important and interesting portions of his materials. The pupil who prepares himself from a compend of this nature is sated with the subject when he comes to the class, and the teacher's words have no interest for him. Indeed, the teacher can, in this case, at most, do no more than to give instruction, by conversation and examination upon prescribed tasks, out of the book, prepared by the pupil for each lesson.

Voluminous historical manuals are intended only for those who study without a teacher. They can not fill the place of compends in *instruction.*

18. There is as great a difference between historical compends for men and those for boys as between a catechism and a system of dogmatic theology, or between a grammar for beginners and one for philologists. This difference consists not so much in the greater or smaller number of historical facts as in the selection of them; in its choice, for instance, of the more abstract civic and ecclesiastical relations, or of more pictorial representations of great men and occurrences. It depends upon the spirit in which the book deals with history.

A childlike and delicate tact may be exercised in the selection from the text-book of what is proper and comprehensible for beginners. The youngest pupils will prefer historical matter which is as near as possible in character to stories; they only gradually grow into a feeling for historical truth. Observe, for instance, what are the actual points of interest to children. They take pleasure in hearing of Marathon and Salamis, and of the campaigns of Alexander; but none in the contests between the patricians and plebeians of Rome, of the agrarian law, &c. They are not usually as much interested in Cæsar as in Alexander.[*] In brief, they are pleased with whatever stimulates their imagination by beauty, greatness, nobility, chivalric bravery, and adventurousness; but not with any thing that is cold or purely intellectual, such as the subject of civic relations and civil controversies. Such matters are repulsive to them.

There are compendiums, as well as teachers, who do not use sufficient care in observing what children like and can understand. We are now speaking, let it be remembered, of school-children, not of students, who have reached the verge of adult age and of civic life. These latter very properly require a presentation of the subject which does not merely seek to please by an exciting narrative, but which shall tend to direct and fix their minds in a knowledge of the true and serious nature of the approaching labors of their life as citizens, and for the great and solemn problems of human life generally.

We have thus discussed the beginning of the study of history. What, now, is its ultimate object—the purpose of all the labor bestowed upon it? What are the highest aims which we have in view in the lower as well as the higher stages of progress in the study? Let us prepare to answer by deciding a narrower preliminary question:—What do we desire to learn from the biography of an individual man? I reply, The problems of his life, and their solution. The history of the world is the biography of the human species—under which nations are the varieties. What are the gifts and the problems of humanity—of single nations? "There are many gifts, but one spirit." Whence do we come—whither do we go—we, all men, taken as one representative man?

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[*] Of the Romans, children—like Livy—make a special favorite of the elder Scipio.

When an individual dies, we ask, What has become of him? And millions and millions have, in like manner, died during the course of time, and what has become of them? History plays over graves; and future generations, like past ones, are all drawing toward the great necropolis. When will the dominion of death be ended? Does the end of Time—the beginning of Eternity—now approach, when they shall no longer be born or die?

The infancy of man is lost in the darkness of the past, and its future fate in that of the future. No man has investigated and understood death; and none has escaped over the limits of that unknown land from which no wanderer returns.

At this point Revelation appears, displays to us a part of the future, and opens to us the knowledge of our race—so highly gifted, so fallen away from God, and saved and forgiven through Christ. It encourages us as to the departed, and prophesies the resurrection of the dead and the Last Judgment. At this tribunal, love will be the rule of procedure; to him who hath loved much, much shall be forgiven.

What pride lost, the lowliness of Christ has recovered. With the crucifixion and resurrection of Christ began a new creation, the regeneration of a fallen and saved world, the establishment of the kingdom of God, in which all contentions shall cease. It is the kingdom of a love that shall never cease, because it is stronger than death.

VI. GEOGRAPHY.

[Translated from Raumer's "*History of Pedagogy*," for the American Journal of Education.]

PESTALOZZI mentions a schoolmaster who instructed his scholars in geography so skillfully that they were well acquainted with the road to the East Indies, but very ill with the roads and paths about their own village. And Rousseau says: "I assert that no child of ten years old, who has had two years' instruction in geography, can, by using the rules which have been given to him, find his way from Paris to Saint Denis; or can even find his way about the curved paths in his own father's garden, without making a mistake. And these are the learned men who know, to a hair, whereabouts are Pekin, Ispahan, Mexico, and all the countries of the earth."* The reason of this practical incapacity Rousseau found to be that the children were taught maps only; the names of cities, countries, and rivers, which existed, for the scholars, only on the maps where they were shown to them. He advised, on the contrary, to commence instruction in geography by furnishing the boys with correct knowledge of the neighborhood of their own place of abode, and making them draw maps of it.

These views of Rousseau seemed the more reasonable to me, because I had spent years in geognostic researches among the mountains, and knew by experience the heaven-wide difference between a knowledge of a map and of a country. I composed a dialogue upon teaching geography, in which I set forth Rousseau's views in detail. The speakers were Otto and George. "Before I made my first tour to the Silesian mountains," says George, "I read over all that I could find respecting them in books of travels. The result of this reading was, that I formed in my mind so distinct an idea of those mountains that I could have painted them from these descriptions. I came among the mountains themselves; and, to my astonishment, the mountains of my imagination had no resemblance whatever to the real ones." And he says, again, "Permit me to add something further, in order to make my meaning clear. If any one inquires of you about the features of your room, or your house, you describe them to him according to the representation of them which is before your mind; not according to such a representation before your mind of ground-plans or elevations. If you are asked about a house in your neighborhood, you answer in like manner, not according to any representation before your mind of a plan of the city, but according to a representation—such as your faculties have made it—of the city itself; you say through what streets the questioner must go to reach the houses, and you point it out to him by shape, color, and peculiarities. And you can in the same way describe localities in the neighborhood of the city—unless you are an inveterate stayer at home. But how will it be if any one inquires of you for directions to a place say twenty-five miles distant? Will the picture of the road in that case still be clear before your mind, as it runs in through the fields and the woods, so that you can tell through what villages and over what waters it passes, how you must leave this mountain on the right hand and that castle on the left? Or will not your imagination in this case be at fault; will you not have forgotten many portions of the road, and have but an obscure recollection of others? May you not even have quite forgotten the whole road?" And when Otto answers, "This is the case for which maps are intended," George replies, "Then you must have within you the representation of the maps instead of that of the localities, and give your directions wholly from that, or else your recollection of the map will mingle in a confusing manner with that of the ground." And, at last, when the question is put, "How does the road run from your residence in Germany to Canton, for instance, or Irkutsk?" it appears that all representations in the mind of the extensive regions over which you must travel will quite disappear, and the representation of the map will entirely occupy their place.

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* Second book of "*Emile*."

Otto now calls attention to the necessarily limited extent of the knowledge of most persons respecting countries. No Titan, he says, is born, who can give information about the whole earth as fully as we can about our own homes and places of abode—who carries in his mind representations of all lands and nations. We must therefore make use of indirect knowledge, of some kind, in the place of direct. Whether this indirect knowledge shall begin with the district in which the learner lives, or the kingdom—whether with a smaller or larger area—is of but small importance.

George. What you say is like what I once heard alledged against the intuitional method in arithmetic, which Pestalozzi urged so earnestly. What is the use of it? asked its opponents; in the case of large numbers, all actual pictures of them must disappear from the mind. Who can imagine even a hundred apples? Away, therefore, with all intuitional arithmetic.

Otto. I agree with them.

George. I do not. I think the power of intuition should be developed as far as to the number ten, which can be counted on the fingers. So far the smallest capacities might attain. Then the tens, and afterward the hundreds and thousands, might be treated as units, and thus, by means of the wonderful decimal system, the most monstrous numbers can be dealt with. Without this intuitional knowledge, from one to ten, the children are liable to run into a mere course of juggling by means of the decimal system, without gaining a clear and intelligent knowledge of arithmetic.

Otto. And what is your application of all this to geography?

George. The numbers from one to ten are the boy's place of abode, the man's country; they are the Archimedean point in geography. He who understands them thoroughly may acquaint himself with other countries.

George now proceeds to explain how, according to Rousseau's system, the boys may be carried onward from the knowledge of, and ability to map out, the neighborhood—their home and its vicinity—to an acquaintance with foreign countries and the ability to describe them. During youth and manhood, he says, they may take journeys, especially within their German fatherland, and to countries most interesting to Germans, and may thus enlarge their direct knowledge of countries. But, he adds, how great soever their knowledge is, it can never include the whole earth; and this fact forces us to use substitutes—to supply the defect by means of a symbolical knowledge of the earth. And he explains this symbolical knowledge as follows:—

The sphere of the individual man is limited in space and in time; he can not exceed the measure of his bodily growth, nor add a single year to his life, nor do wings bear him over the earth. Yet his mind belongs not merely to the immediate present, but to a greater spiritual universe. Thus there is an incongruity between the wide aspirations of his mind and the limitations of his mortal body. The use of symbols is a mode of reconciling this incongruity.

There are two kinds of symbols; artificial and natural. The artificial symbol brings before the mind original ideas, by means of representations; while the natural sees the original idea in the parts of it. Permit me to give a brief illustration of these two kinds of symbols. You can represent Paris to yourself by plans of the city, panoramas, models, descriptions—by the most various kinds of representations, based upon an actual immediate observation of Paris. You see the city mirrored in another mind. These I call artificial symbols. But suppose you could remain for some time in some house in Paris, *without* leaving it. You would see and hear from your window the various noise and haste, the running, and the outcries of laborers and tradespeople, the mountebanks and marionnettes, cabs and water-carriers, national guards and chestnut-sellers, cobblers and fishwives, and thus, by your observation of a small part of the city, you would obtain a knowledge of it as a whole, by the method of natural symbols. *Ex ungue leonem.*

Now put the earth in the place of Paris. We have all manner of representations of it: globes, maps, reliefs, pictures, and engravings of localities, cities, and buildings, descriptions of all countries, and general descriptions, compiled from the descriptions of individual immediate observers. These representations are, some of them, of late invention, such as reliefs and panoramas; and in part they have been so improved, within the last century or two, that they must now be treated as entirely new subjects—as is the case with maps.

Thus there has arisen, during these last centuries, a most earnest and thoughtful endeavor to create, by means of these various representations, a new earth on the earth—the greatest of all artistic efforts. To this end point the untiring zeal shown in collecting beasts, animals, and minerals from all parts of the world; and the investigations of all the nations, their languages and manners. Who can tell how far this unwearied zeal will go? As man's susceptibility to impressions increases by early travels within his own country, and at the same time his own powers of representing, and his capacity for comprehending the representations of others, which again are on their part becoming more and more perfect, who can tell to what a degree of broad, general comprehension of the whole earth one can attain who is acquainted with his own country, by means of intercourse and artificial symbols?

In describing natural symbols, George says:—

As at Paris you would become acquainted with Paris itself by looking out of your window, and not with a representation of it—learning the whole from a part—so should you gain from your own country a knowledge of the whole earth; this portion of the earth should be to you a symbol of the whole of it. Do not the sun, moon, and stars shine upon your own country as they do upon all the rest of the world? Does not the magnetic needle, that living representative of the earth's magnetic axis, point to the north before your eyes? Are not the mountains of your own country constructed almost exactly as are those of all other parts of the world; and are not her plants and animals the same, or of the same species, which are found throughout a great part of the world? Open your eyes, and your own home will be seen to be as a new paradise, having gathered together in it all the creatures of the earth. Learn, however, first of all, to know and love your own people; and this will lead you to the comprehension of humanity as it exists throughout the whole earth. Thus direct knowledge of your own country is an object in itself, and affords the means of understanding representative descriptions of the earth—the geography of artificial symbols—while its thorough development also forms a basis for the geography of natural symbols, which shows, in our own country, the features which characterize the whole earth.

Four years after writing this dialogue, I went to Nuremberg, and there taught geography for the first time. The question came up, whether my views in this department of instruction, based upon Rousseau's, would stand the test of practice? And I must confess that they did not.

Taking walks—an aimless wandering about the neighborhood—was very pleasant to the boys. But when a definite purpose was contemplated in these walks—when the boys were made to gain correct knowledge in them, consciously and of purpose, and were again made to use all their knowledge in drawing a map, all their enjoyment of the walk was at once destroyed. Instead of being a relaxation and a relief from the school-lessons, they became merely peripatetic lessons themselves. This dislike of theirs proved to me clearly that my theory of geographical instruction was wrong; and I gave it up.

I afterward, however, attained my purpose of making my pupils use a knowledge of their abode and its vicinity as an introduction to the understanding of maps, and even of the globe, in a manner apparently similar 'to that which had failed, but really very different. During the geographical instruction which I gave in Erlangen, I began, for instance, with a large plan of the city. The pupils examined this with the most lively interest, and picked out all the streets, their own homes and those of their acquaintance, and the churches and other public buildings. They could not satisfy themselves with looking, and their researches had no end.

After this I gave them a large and very fully detailed plan. On this the city itself was, of course, smaller than on the first plan, but was still clearly laid down. The pupils now first carefully compared the two representations of the city, and observed their resemblance, and how they differed only in the difference of their scale.

They then looked out upon this map all the neighboring localities with which they had become familiar during their walks, and followed the roads from the city to one place and another, vieing with each other in the exercise. Those who were less accurate in their knowledge afterward of themselves directed their excursions to points not known by them, and others searched out new routes. Without my having at any time imposed this acquisition of correct knowledge upon them as a task, they came at last to have a good knowledge both of the localities themselves and of the map of them. The map did not become, what Rousseau finds so much fault with, "a mere set of marks, without any equivalent conception in the mind of the thing represented."

After this map of the neighborhood of Erlangen, I placed before them one of Middle Franconia. The area of the last map occupied but a small space on this. But, on the other hand, it included a much larger surface; and the pupils could pick out upon it Nuremberg, Fürth, Forchheim, Bamberg, and other places which they knew, and also the villages, &c., which they had observed on the roads to these larger places.

I need not add the details of the course by which I went on to exhibit Middle Franconia as but a small part of Germany, that as one part of Europe, and Europe as one part of the whole earth.

Even while the pupils were occupied with the neighborhood of Erlangen, I at the same time began to instruct them, in the simplest manner, about the cardinal points, the rising and setting of the sun at different times of the year, and its place at noon. Those city streets which ran north and south, and over whose southern ends the sun thus stood at noon in summer, were of great assistance in this course of instruction.

I am here only discussing the first beginning of geographical instruction. If now it be inquired, Why is this method adapted to beginners, and not the systematic examination of localities and map-drawing along with it? the explanation is to be found, as I have already shown, in the dislike of children to what is purposeful and methodical. In the school, they are satisfied to have every thing go on in the fixed routine; but they think it unendurable and even unjust to apply school discipline to their whole lives, and even to their walks. And, moreover, it is natural for beginners to prefer good and well-drawn maps to the imperfect and ill-looking ones which they scratch off with so much pains and weariness. And, again, when they find out, as by my method, that they have been acquiring knowledge in taking walks, they are as delighted as was M. Jourdain in the "*Bourgeois Gentilhomme*," when he found out that he had been talking prose all his life without knowing it.

After having made a beginning in this way, I was at a loss to know what geographical text-book to use in my subsequent instruction. In most of the older manuals I failed to find a proper arrangement, either in general or in the description of particulars; and many of them were also faulty in selection of materials, and in the proper proportions of it.

The lack of proper general arrangement appeared most prominently in the fact that the authors had not sufficiently distinguished between what is proper for a universal geography and what belonged to a description of particular parts of the earth and countries.[*]

To illustrate the extreme want of good order in describing subordinate portions of the earth, I give the following enumeration of German mountains and lakes, which I request the reader to follow on a map: "The principal mountains are, the Harz, (Brocken, 3,495 feet high;) Schwarzwald, (Feldberg, 4,610 ft.;) the rocky Alps, the Rhætian and Noric Alps, (Orteles or Ortles, 14,814½ ft.; Grossglockner, 11,982 ft.; Hochhorn, 10,667 ft.; Platey-Kugel, 9,748 ft.; Watzmann, 9,150 ft.;) the Carnic and Julian Alps, (Terglou, 10,845 ft.;) the Fichtelgebirge, the Schneeberge, 3,468 ft.; the Kahlenberg, the Birnbaumerwald, the Sudetic Alps, and Riesengebirge, (Riesenkoppe, 4,950 ft.;) the Moravian mountains, (Spieglitzer Schneeberg, 4,280 ft.;) part of the Carpathians, connected by low hights with the Moravian and Sudetic chains, the Thuringian mountains, the Erzgebirge, the Spessart, the Rhone mountains, the Böhmerwald, (Rachel, 3,904 ft.; Arber, 4,500 ft.;) the Wesergebirge, Westerwald, Odenwald, Ardennes, Vosges, Hundsrück, &c. Lakes: Lake of Constance, (seven miles long, three miles broad, and more than three hundred fathoms deep;) Chiemsee, Lake of Cirknitz, the salt and sweet lake of Mansfeld, the lakes of Mecklenburg, Brandenburg, and Pomerania, the Dümmersee, the Traunstätter and Hallstätter in archducal Austria, the Steinhuder Lake," &c.

Nor is this example of confused and disorderly arrangement from the earliest best geography, but from the favorite manual of Stein, which has been translated even into Polish, and from the fourteenth edition of it.

But many geographical manuals are also deficient in proper selection and proportion of materials. They contain unimportant matter, and omit the most important. Murray, for instance, in his description of Cologne, mentions Farina's *eau de Cologne*, but not the cathedral. They sometimes contain statements of results in natural science which are quite problematical or even altogether inadmissible—such as youth should not be informed about. They should receive, as far as possible, only what is entirely true.

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[*] I have expressed myself more fully on this point in my review of Murray's Geography, reprinted in my "*Crusades*," (*Kreuzzugen*.) Subsequent examples will illustrate the point.

It is also often the case that geographers quite fail in an accurate understanding of their subject, and of the limits between it and the provinces of other sciences; for the idea of geography is entirely different from what it was in the time of Busching. It is in our time as if all the arts and sciences had appointed a rendezvous with geography for a great family feast on occasion of the first discovery of their relationship. Here gather astronomers, physicists, botanists, zoölogists, mineralogists, philologists, statisticians—who can enumerate them all?—bringing the fruits of labors too vast for description, to throw them all into one great common structure. They seek to gather together every thing which the wide earth offers, so that it may be seen and understood.

It is accordingly of great importance to observe a proper proportion among all these, and to select judiciously; so that the geography shall not come out a hydrology, zoölogy, nor mineralogy; so that in general no department shall exceed its proper limits. That many fail in this respect is shown, for instance, by V. Hoffmann's geographical writings. In his work "for all classes," entitled "*Germany and its Inhabitants*," (*Deutschland und seine Bewohner*,) the description of the Rhine and its tributaries occupies sixty-three pages; and he mentions 481 streams in the valley of the Rhine, 337 in that of the Elbe, 215 in that of the Oder, 487 in the German part of that of the Danube. In his "*Europe and its Inhabitants*: a Manual and Reading-book for all Classes," (*Europa und seine Bewohner: ein Hand-und Lesebuch für alle Stande*,) he gives a list of measured hights of land, and of uninteresting lengths and breadths, occupying no less than 191 pages. In the same work, intended "for all classes," he gives a hundred pages of Latin names of animals to be found in Germany; as, for instance, of 85 tape-worms, 54 snails—such as *Helix holosericea*, *H. Olivieri*, *leucozona*, &c. In this way school geographies are filled up with Latin names of plants and animals which the boys have never seen and probably may never see; and the author flatters himself that he puts forth an intelligent method of instruction and natural science, and good intuitional exercises.

I wrote, in 1831, a manual of general geography; in which I endeavored, as far as possible, to supply these deficiencies of my predecessors. Future writers will, in turn, supply my own.

At the same time, I published a "*Description of the Earth's Surface: an Introduction to Geography*," (*Beschreibung der Erdoberfläche: eine Vorschule der Erdkunde*,*) for beginners; and made use of it in giving instruction subsequent to that which I have already described. In this I begin with some very simple lessons in mathematical geography, especially respecting the sphericity of the earth, the ideas of axis, pole, equator, parallel, latitude, longitude, tropics, polar circles, and zones. Then I briefly discuss maps, and show how these either represent the whole earth or parts of it; and how the degrees are marked upon them. I have found it very useful here to compare some maps with a globe. I ask such questions as, for example, What country is that, which extends from the 9th to the 21st degree of longitude, and from the 36th almost to the 44th degree of latitude? Or, In what country do the meridian of 40° and the parallel of 37° north intersect? And the pupils can put similar questions to each other.

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* This was extracted from the second part of the manual.

When I have proceeded from the city-plan of Erlangen as far as to the globe, and have connected with it the instruction above mentioned in mathematical geography, I take up my "*Description*," together with the well-known and excellent maps of Sydow. In this work of mine I endeavored, as far as possible, only to deal with general subjects, and to consider together only things properly related. What I mean by this is sufficiently indicated by its opposite, as shown in the list of German mountains from Stein. I will, however, add an illustration. The description of seas* mentions five principal ones; and all others are given as dependents of these five. I consider in a similar manner the mountains, which are usually treated as if entirely isolated, and having no connection with each other. Such, for instance, is the case with the mountains surrounding the Bohemian Elbe valley; and the chain of mountains which, under various names, runs from Calabria to the Peloponnesus, and sends out a branch from Macedonia to the Black Sea.

This principle, however, appears most clearly in the case of the rivers. Under the old arrangement, when the political divisions of the earth's surface were also used in classifying the descriptions of mountains, rivers, &c., the Rhine, for example, had to be mentioned in the descriptions of no less than twenty-two countries and small states; and the student was left to put together for himself, as well as he could, a single picture of the river, out of these twenty-two scattered notices. And, again, if we are to consider as one, and in one description, not merely the whole Rhine, from its sources to the North Sea, but also all its tributaries—the Neckar, Main, and Moselle, and the smaller streams again which run into these, as the Kocher, Jaxt, Regnitz, &c., we should, in this case, mention the extent of the domains of kings and princes, but only the great domain of old King

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* Not including inland lakes.

Rhine himself.* My description names the most important towns on each bank of each river: there are comparatively few important places which do not stand on a river.

This book is as brief as it could be made without making it unintelligible; with the intention of not depriving teachers who should use it of the most attractive portions of what they might themselves add to its information, such as fuller details in the character of rivers, mountains, &c.

The book, so far as it is to serve the purpose of instruction, is a description of maps; and it was necessary that these should agree with it. But, as it appeared, this was not the case, as the maps usually employed in the schools adhered to political divisions, while my "*Description*" neglected these and proceeded chiefly by mountains and rivers. It was very inconvenient, for instance, to follow out the Alps on the separate maps of Italy, Switzerland, Germany, &c., and the more so as these maps were mostly drawn to different scales. This difficulty is avoided by Sydow's maps. When the pupil has obtained, by means of these, a general view of the waters, mountains, and levels of the whole earth, he may then, for the first time, begin to use maps with political divisions. With the aid of this they may first give the boundaries of some particular country;† and then mention which of the mountains, rivers, &c., which they have been studying about, belong in whole or in part to that country. Thus, to France belong the whole of the Cevennes, the northern side of the Pyrennees, and the western of the Ardennes; of rivers, the Seine, Loire, &c., entirely, but the Rhone, Moselle, Maas, &c., only in part. Of the French cities which are important enough to be taken notice of by a beginner, most have already been mentioned in the previous study of the rivers; as Paris, Rouen, Bordeaux, Lyons, in following the course of the Seine, Garonne, and Rhone.‡

Oceans, mountains, and rivers are elements of geography which go back to a period quite beyond human history. Cities are the most ancient monuments of men. Abraham saw Damascus, and lived near Hebron; Jerusalem existed a hundred years before David; Rome is in the third thousand of its years. Whatever revolutions happen, in the course of time, to nations—their abodes, and boundaries, and dominions—cities outlive almost all changes; only a comparatively small number of large ones—such as Babylon, Persepolis, Palmyra, and Carthage—being quite given over to desolation. Our own country exemplifies, within a smaller space and time, the same relation of cities to history. Mentz—first Roman, then the seat of archbishops and electors, then under the French dominion, and now Bavarian; Treves and Cologne—earlier Roman towns than Mentz, afterward the seats of archbishops and spiritual electors, and now Prussian; &c.

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* Schenkendorf calls the Rhine

"An ancient monarch, nobly born."

†They should also give its length and breadth in degrees, using at the same time the globe, which has been used, as I mentioned, in the first beginning of mathematical geography.

‡The few other important cities, such as Marseilles, Toulon, &c., may be added at this time.

These ancient cities, then, which have survived the changes of time, and the seas, mountains, and rivers, which existed before man, are the permanent monuments with which it is of inestimable importance that pupils should become acquainted, for the sake of all their subsequent historical studies. They will thus readily understand the geography of the ancient historians. When they see the maps of ancient Gaul, Spain, &c., they will at once recognize the Arar as the Saone, the Matrona as the Marne, the Bætis as the Guadalquivir, &c.; Rotomagus as Rouen, Lugdunum as Lyons, Cæsarea Augusta as Saragossa; Abnoba Mons as the Black Forest; &c.

The geographical instruction thus far described is either immediately concerned with actual intuition by the senses or is closely connected with it. In this way the pupils have gained a knowledge of the seas, mountains, plains, rivers, and lakes, and the most important countries, and their boundaries, mountains, rivers, and cities. It is now time to give them a brief and clear description of the various races of men, languages, religions, and forms of government.

After all this, there remains but little to say of the description of particular countries—that is, of what particularly characterizes each individual country and nation, and distinguishes it from others. Here is the first place where more detailed descriptions of the principal cities can properly be given; pictures of them being used where practicable. But nothing should be protracted too far.

In this manner, according to my view, should the foundation be laid for future geographical and historical studies. These, again, may be carried further and relieved, by the reading of good travels, newspapers, missionary reports, &c. The pupil will now find his own knowledge so confirmed that he can proceed with no further aid, if he has good maps. He will also find himself sufficiently at home in any part of the earth to understand its ancient geography.

But all this fixation and extension of geographical knowledge is chiefly gained by means of books and maps. It is only in the first commencement of it that we make use of any immediate knowledge of a very small part of the earth's surface—namely, of the pupil's place of abode, and the vicinity of it.

It may be asked whether then I have wholly given up my earlier views, above described, on the method of instructing in geography? By no means. I only convinced myself, as I have shown, that the practice of draughting the neighborhood of home, with which that method begins, was not proper for beginners. Older scholars, who have gained a knowledge of drawing, may, however, practice it with advantage. But this prosaic method, as I may call it, of observing and delineating, should always have a poetic side; it should be made useful in instructing the pupil to draw landscape from nature, and especially to gain facility in sketching.* If travels in Germany and in such other countries as are most beloved by and interesting to us Germans are the best preparatory school for understanding all the countries and people of the earth, the young must be made ready for these travels by the acquisition of such knowledge and accomplishments as will be of most service in them. But landscape drawing and architectural drawing occupy an important place among these.†

An adult person, desiring to know what further knowledge and accomplishments are useful to those who travel, would ascertain to the best advantage from reading the travels of distinguished writers, like Goethe, Humboldt, &c. The acquirements of these men are shown by what they accomplished.

Here I pause. Having thus endeavored to trace the course of geographical study from its very first rudiments, I refer, for the ultimate aims of geographical study, to what I have extracted from my dialogue on geography, already given.

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* I have given my views more at large on the relation between landscape painting and map drawing in the first part of my Miscellaneous Writings, p. 29.

† Unfortunately I am no draughtsman. In order in some measure to supply this deficiency, I used, while among the Silesian mountains, to make out from elevated points a sort of panoramas, on which I entered, with the aid of a compass, the names of mountains, towns, &c., in their proper directions, putting the furthest further and the nearest nearer from my own position in the center of the paper. These panoramas frequently proved each other's correctness. If, for instance, I had laid down Mount B. south-east from Mount A., then, in drawing from Mount B., Mount A. would be north-west of it.

VII. INSTRUCTION IN NATURAL SCIENCE.

[Translated from Raumer's "*History of Pedagogy*," for the American Journal of Education.]

INTRODUCTION.

I PRESENT here materials both new and old. I printed some essays on instruction in natural science as early as 1819 and 1822, in the first and second volumes of my "*Miscellaneous Works*," (*Vermischten Schriften;*) and in 1823 I wrote a programme "*On Instruction in Natural Science in Schools.*"

Although, during an uninterrupted course of teaching since 1823, I have made new experiments, and have had occasion here and there to seek out and to open new paths, yet my original views on the subject have not substantially changed.

Even during the period of my own studies, I felt a repugnance to the usual course of this instruction. From 1805 to 1808, I heard lectures on mineralogy in Freiberg, from my never-to-be-forgotten teacher, Werner. His school has scarcely its parallel; pupils came to Freiberg from all parts of Europe, and even from Asia and America. And from that school what men have proceeded—Alexander von Humboldt, Steffens, Novalis, Schubert, Weiss, Mohs, and how many more![*] Werner's oral delivery was a model of lucidity and order; and his descriptions of mineralogical species left nothing to be desired. But when he had described perhaps ten species, and had scarcely a quarter of an hour left, he would have the cases which contained these ten groups opened on the table before us. It was a very torture of Tantalus, to gaze with straining eyes at these, endeavoring in so short a time to obtain a distinct impression of the appearance of so many different species. To do this, indeed, was impossible, even for the most ardent and attentive learner; and they would have gained, not an actual knowledge of minerals, but only fragments of it, had Freiberg afforded no other means of acquiring it. But traders in minerals came there from the most distant countries, and of them the students, amongst whom some were usually quite rich, purchased. Every one had a larger or smaller collection of minerals; and they showed their treasures to each other, and talked about them, and studied them together. But this was not enough. After, therefore, I had attended the lectures twice, I engaged private lessons from Werner, merely for the sake of going through his excellent collection under his direction. When, in 1811, I was appointed professor of mineralogy at Breslau, I saw that, under the circumstances of that situation, I must pursue a different course from Werner's, and must proceed as much as possible by the way of intuition, and keep the oral part of my instruction in the background, in order that my pupils might gain some actual mineralogical knowledge. For Breslau offered none of the outside assistance which was accessible at Freiberg; the academical collection being the only one from which the students could gather any information.

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[*] While I was in Freiberg I ate at a boarding-club, which consisted, besides us Germans, of a Swiss, a Frenchman, a Roman, a Spaniard, and three Russians, one from Nertchinsk, which is near the Chinese boundary-line.

I shall hereafter describe the method to which I resorted. Besides the students, I had other hearers also. I offered to the rector of the Breslau Gymnasium to instruct any of his scholars who might have a special taste for mineralogy, and had the pleasure of always having some gymnasiasts under my teaching during my eight years' stay there; and my experience in Göttingen was similar.

I was transferred, in 1819, from Breslau to Halle, where I taught on the same plan, and also gave the mining pupils practical lessons, in the neighborhood, in the mode of examining mountains. In 1823 I left Halle and went to Nuremberg. Here, as instructor in a private school, I had an opportunity of instructing boys of from ten to fourteen in mineralogy, and had the use of a good collection for the purpose. I also endeavored to make my pupils acquainted with the vegetable kingdom, by the method which I shall hereafter describe.

I received my present appointment to the professorship of natural history and mineralogy at the University of Erlangen in 1827. Here I taught mineralogy to the gymnasiasts in the same manner which I had previously made use of; but to the students in a somewhat different one. Instruction in general natural history was a somewhat novel employment for me. It was evident that in this department I could not, as in mineralogy, begin with the observation of nature herself. How could this be done, for instance, in mathematical and physical geography? It was a matter of course that, as things then were, oral instruction must be the principal resource, notwithstanding that very many points might be made as clear as possible to the senses by means of exhibiting natural objects, pictures, maps, models, &c.

So much I have said by way of preface, to give the reader a general view of the course which I pursued in learning and teaching natural history; and to make it properly clear that mineralogy was my chief object.

I. DIFFICULTIES.

The teacher of natural science might well turn dizzy when he considers the vast compass of his subject, and the mental power and exertion which they demand.

Their extent is increasing daily. Where Hipparchus and Ptolemy saw 1,022 stars, Lalande and Bessel saw 50,000; where the Greeks and Romans knew 1,500 species of plants, Stendel's "*Nomenclator Botanicus*" for 1821 gave 39,684, and its second edition, in 1841, no less than 78,005, without reckoning the cryptogamia. Thus the number of botanical species has nearly doubled itself within twenty years. In zoölogy there has been a similar increase. The twelfth edition of Linnæus' "*System*" included about 6,000 animals, while Rudolf Wagner, in 1834, enumerated about 78,000. The greatest German mineralogist, Werner, who died thirty years ago, in 1837, would not now know the names of more than one-third of the species of minerals now recognized.

In physics and chemistry there has been a similar growth. This can not be so well expressed by numbers; but almost any one can recall many of their doctrines, of which nothing was known a hundred years since.

The teacher, in casting his eye over this broad ocean of knowledge, might well despair of being able to fix upon a beginning, a path to pursue, and an object to aim at, for his pupils. And this despair might well increase, on considering how far scientific training is carried in these various sciences, and what demands are made both upon pupil and teacher. In most branches of natural science—including the higher ones—mathematics holds the scepter; and to him who is not master of that study the gates of their paradise seem to be entirely closed.

II. OBJECTIONS TO NATURAL SCIENCE IN THE GYMNASIUM ANSWERED.

But these difficulties in the nature of the study are not all. Still others, raised by the adversaries of natural science, arise against its pursuit in the gymnasium; and of these we shall now speak.

Unless, say these adversaries, you propose to claim, with Jacotot, that we ought to be able to teach what we do not understand, you must admit that instruction in natural science must be given up, for the reason that there are no teachers who understand it. We answer, It is not to be denied that heretofore the incapacity in this department of many teachers has been plain enough. Without any knowledge of minerals, plants, or animals, they all lectured to the boys out of Raff's or Funke's natural history, made them commit to memory the descriptions of animals, &c., and then questioned them on them. But men always generally escape from such errors as this.

Our hopes of obtaining competent teachers of this department are increasing, because attention has of late been earnestly devoted to the purpose, and because there have been established in the universities, for those who devote themselves to mathematics and natural science, seminaries, corresponding to the philological seminaries.*

But, rejoin our opponents, even supposing that teachers of natural sciences have been trained thus, what good can they do as long as the gymnasia are destitute of the necessary means of instruction? Have you any expectation that, in times so troubled as the present, and when demands are made upon the income of the state from so many quarters, collections in natural history, physics, &c., will be given to our gymnasia? Let us be rejoiced if our universities are furnished with all these means of instruction.

Such objections as these are based upon the mistaken idea that all instruction in natural science is superficial unless it is carried to the greatest extent. For the apparatus of instruction must be richer, better, and more costly, in proportion to this extent.

But no such scope in this department is proper for the gymnasia; and that very scantiness of apparatus, of which so much complaint is made, would actually sometimes be a benefit, by constraining teachers to moderation in pursuing these studies.

To give an example:—The course in botany could be abundantly furnished for all necessary purposes from the flora of each neighborhood. No forcing-house, not an exotic plant, would be requisite in addition. Nor is any place destitute of gardens sufficient to enable the scholars to observe the growth of plants, from their first sprouting to the blossom and fruit; a study worth more than a knowledge ever so thorough of the "*Philosophia Botanica.*" And, in like manner, every place has its fauna, in its domestic animals, first, and in others. It is most difficult to furnish the needed materials for mineralogy; as, in this study, crystals are required. But even here good specimens can be obtained, with very small means, of the species which occur most frequently, such as quartz, iron pyrites, lead ore, &c.† There may often be found, again, in chemical laboratories, apothecaries' shops, &c., very fine crystals, costing very little, as of alum, &c. Lastly, many gymnasia might obtain assistance from the universities, by gifts of duplicates, &c., from the overplus of the collections of the latter. From the duplicates at Breslau, I furnished small collections, at a very moderate price, to thirteen educational institutions.

But these considerations would not comfort the opponents of natural sciences in the gymnasia; they would now come out with their real meaning—the reason of their reasons. The business of the gymnasia, they say, is properly classical education, by and for the classic authors. This requires so exclusive a devotion of all the time and powers of the student, that none can remain over for instruction in natural science. Education should not give the scholar superficially universal learning; it is better for him to learn one thing well than a heterogeneous mixture of many things badly.

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* Such a one was established at Bonn, in 1825; a second, in 1835, at Konigsberg; and a 'Seminary for Real Teachers," at Tubingen, in 1838.

† *Particularly if small specimens are used.*

This view I have already controverted in my account of Sturm and his gymnasium. This teacher, with the utmost professional skill, was led astray by the idea of our opponents. He taught Latin, and almost Latin only. Greek was next; and no instruction whatever was given in Hebrew, German, modern languages, mathematics, history, geography, natural science, or drawing. The simplification can not be pushed further, nor better managed; and yet Sturm complains of the small results obtained.

One thing well is better than many ill; but the accent should be laid on "ill," not on "many." In the gymnasia, many things can be taught with great success, if it is done in the right way, at the right time, and in the right proportions. And, on the other hand, a man may limit himself to one thing, and teach that ill; as, for instance, if he teaches Latin only, and that with the design of enabling his pupils to speak and write it as if it were their mother-tongue.

The universities, say our opponents again, should afford the necessary means for those who desire to become acquainted with natural science. Doubtless they should, but not for elementary scholars in that study. They furnish the means for the higher philological studies, but do not undertake to teach beginners *mensa* and *amo*.

It is the more proper that the gymnasia should instruct in the elements of natural science, because boys are much better adapted to those studies than youths or men. How easily and firmly do recollections of plants, animals, and minerals impress themselves upon the mind in our earlier years; and how strongly is a child inclined to make himself acquainted and familiar with every thing which surrounds him! But with the elements of Latin it is wholly different. These have no excitement for the boys. And for the very reason that the material world is so stimulating to him, and occupies him so much, is it so hard for him to busy himself exclusively with the more intellectual elements of language. Let them now be compelled in that direction which is opposed to the tendencies of their child's natures. Will not such a measure result in their becoming unnaturally warped in mind, and ultimately insensible to all the beauty of the heavens and the earth—and to all the beauty of the classics, too? For to feel the latter there needs a training of eye and ear to elevated enjoyment.

I have mentioned that I instructed gymnasium pupils in mineralogy in Breslau and Erlangen. These usually attended at 11 A. M., at the end of their morning-lessons. It may be imagined that they came so weary as to be disinclined to attend. Very far from it; they came punctually, and of their own free will. They took hold of the study with all their hearts; and indeed showed in most cases far more disposition to like it, and clear comprehension of it, than many older than they. It was here that I learned how well the rudiments of natural science are adapted to boys, and that, when they have been working hard at their studies in language, it is a proper and natural impulse which leads them to refresh and recreate themselves by studying crystals and flowers.

A writer on natural science has required that each pupil should, at least, bring with him to the university a few thousand names in natural science—expressions being by this, of course, intended for correct ideas in natural objects. Without pretending to fix on any precise number, this at least is certain, that, to students possessed of such a supply, lectures could be delivered of a kind very different from those which must now be delivered—lectures which would deal with generalized views, and would treat profoundly of their subjects. The gymnasia must bear the blame of the fact that the universities have to instruct in the very A B C of natural science. If it be asked in what classes of the gymnasium (including the Latin schools) instruction in the natural sciences should be given, I reply, In the lower and lowest; for experience has shown me that the younger boys are capable of retaining ideas of minerals, plants, and animals as well as, and usually even better, than youths.* And these beginners in Latin, whose school-life is all effort and labor, need something in the nature of refreshment more than any other scholars. It is not until they comprehend the classic authors that they find a pleasure in their studies in language.

But teachers in languages are apprehensive that adequate instruction in natural science will render their boys averse to the former study, not to mention the time that would be occupied. Experience has, however, convinced me of the opposite. Those pupils who distinguished themselves in my mineralogical classes were also among the foremost in the gymnasium.

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* The case is different with those departments of natural science which require mathematical knowledge, and do not so much depend upon the intuition of the senses. These—*mathematical geography*, for instance—should only be taught in the higher classes.

The fear that the study of natural science will render the pupils averse to that of languages can have no substantial basis, except when it is made a mere superficial diversion, instead of a serious and thorough study. In this latter case it does not seek merely an unintelligent communion of the senses with the material world, but the development of words, as an intellectual blood, from silent examination; an adequate translation of intuition into words. In this way it has the greatest influence upon thorough cultivation in the mother-tongue; a cultivation which proceeds from things themselves. And, as the poet says, the mother language is the mother of languages; what is useful for the former is indirectly favorable to the acquisition of the others.

I have even seen cases where the study of natural science first awoke a real liking and capacity for language. Things which the beginner at first sees corporeally, singly, which it is difficult for him to comprehend and to survey to his satisfaction, have afterward, under the dominion of the senses and the understanding, and by means of language, become arranged together, connected, describable, in short thoroughly understood. One name describes innumerable individual substances; and the natural philosopher sets down upon a few pages, briefly and clearly, the result of many years' investigations. The student feels doubly the magic power of words for having first felt the resisting power of the material world; and he experiences a pleasure as if, after a long and wearisome journey on foot, he should suddenly receive wings, and ascend easily and swiftly into the hights of the air, looking down upon the long, weary way over which he had before been traveling.

But the thorough mastery of one subject of study trains the student to thoroughness in others, even the most different. If he has acquired, by his studies in natural science, a clear, definite, and sure view and comprehension of the creation, and a corresponding power of expression, he will afterward acquire similar clear and definite conceptions as to language, and will learn to speak and write clearly and definitely on whatever subject he understands.

The influence of natural science will be especially valuable upon the study of history. The former pursuit requires, unconditionally, humble and self-denying views of the material world, and treats as absurd that silly or proud obstinacy which would lay down narrow limitations, and then confine nature within them; and thus it educates the mind to the habit of forming clear and undistorted views of things. And a mind thus trained becomes capable of ready and correct views of men and human life. It can recognize, in minerals and plants, and in men also, a fixed and unvarying plan; and all disfigurements or distortions, for the sake of aiding any superficial theories, will be painful to it.

It is common, in gymnasia, to give only one, or at most two, hours' recitation a week to studies not reckoned as important as those we have been discussing—as geography, for instance; and this plan is often carried through three or four years, in successive classes. This, it seems to me, is an unfortunate method. It occasions those studies to be esteemed mere side-studies, of which a less thorough knowledge will serve. The pupil is sure to see this, and governs himself accordingly. If he receives, for instance, twelve hours' instruction a week in Latin and but two in geography, he not only estimates that the value of Latin is to that of geography as twelve to two, but he takes less pains in studying his geography, because his teacher is less strict in his requirements in it. And his examination and testimonials will only confirm his views on this point. But no pupil should esteem any thing which is taught him a secondary study.

Instead, therefore, of creeping along in this spiritless manner through several classes, at the rate of one or two hours a week, it would be much better to devote as much as four hours a week to the study during a year, and then to stop. Natural science, for instance, might be studied for one year at four hours a week, and geography in its place the next year; and so on. This plan would give the pupils a liking for the study, as they would feel that it had some life in it; whereas, the other mode would render it tedious and long protracted, and would afford them no pleasure at all, and least of all that of thorough learning and investigation.

If the boys have, in the under classes, got the ideas of minerals and plants well impressed on their minds, there need be no fear that they will forget them. These ideas may perhaps pass a little out of fresh remembrance; but, in the second grade of the study, at the university, they will soon return again. The student will not then have to work up his lessons with a botanical hand-book, by means of laborious comparison of descriptions; he will at once know that this flower is a daisy and that a dandelion, because he has always known it from a boy. He will not have to learn what the flower is, but only its Latin scientific name; and thus he can bring to the more comprehensive and profound investigation of the vegetable world eyes and understanding already trained.

III. EXTENT OF ACQUIREMENT.

I allude once more to the perplexity and doubts which, in view of extent and depth of the natural sciences, must annoy the teacher does not know how and where to begin, toward what end to look, and what way to pursue. I have already in part shown how these difficulties may be overcome.

But the question to answer here is, whether knowledge of nature, and pleasure in it, are the exclusive privilege of the learned by profession; and, further, of that portion of them who have reached the highest point of learning? Are there not degrees in knowledge; and can not even the beginner find pleasure in the truth of that degree to which he has attained, if it be really truth? The teacher need not trouble himself about the 78,000 species of plants, nor the difficulty of classing the gramineous and umbelliferous plants. Let him take pleasure in his success, if his pupils have become acquainted with a few hundred characteristic plants, and have studied closely the growth of a few of them from their first sprouting to the ripening of their seeds.

Similar principles are true in the other departments of natural history. Most of my scholars in mineralogy have been able to devote to it but one half-year. My task was, to determine what they could learn within this time—not half-way and dimly, but wholly, clearly, and surely; and thus I dared not fix my limit at too great a distance. Where I did fix it will hereafter appear. At present I will only say that my best pupils acquired a satisfactory acquaintance with the most important, simple, and clear species of minerals,* and a clear perception, derived from actual observation, of the consistent laws which prevail throughout them. It is a consideration which may console the teacher of natural science, for the low degree of knowledge reached by his pupils, that even the greatest masters, who have attained to the highest point of learning, have confessed, with ingenuous humility, how much was that of which they were ignorant.†

IV. BEGINNING.

"We have but little solicitude," I think I hear some say, "for the more or less of knowledge of nature which our pupils shall attain, but much about our own ignorance where and how to begin instructing in it. For we are convinced that eminent men have fallen into error on this point."

The difficulty of adopting the right mode of beginning occurred to me when, twenty-five years ago, I undertook to give practical instruction in studying mountainous countries to the Prussian mining pupils; and induced me to write the following considerations upon the commencement of geognostic studies.

I will now state the method which, in my opinion, the student should follow.

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* Such as fluor spar, lead glance, iron pyrites, garnet, &c.

† This is an expression which has a very different meaning in the mouth of the master and in that of the scholar.

He should first examine, in all directions, the neighborhood of his residence, and should make himself so thoroughly acquainted with it that he can call it up before his mind whenever he chooses. Such an acquaintance is the result of the unconscious and fresh pleasure which youth, joyful and freè from scientific anxieties, will find for itself in such an examination, obtaining in this artless way a simple general impression of the vicinity, not forced upon him artificially by a teacher. He is not teased, while he is rejoicing in the blue heavens and the rapid motions of the clouds, in the oak woods and flowery meadows, where the butterflies play, by a professor with a kyanometer, to measure the blue of the sky with, nor by a recommendation not to stare into the woods, but rather to ascertain whether the oaks are *Quercus robur* or *Quercus pedunculata* ; or, not to look at the flowers in the meadow all at once, as if they were a yellow carpet, but to take his Linnæus and determine the species of this ranunculus. No entomologist is setting him to chase butterflies and impale them. Neither is the youth, when inspired to devotion by the snowy Alps, glittering in moonlight, like so many spiritual, silvery forms of giants, annoyed by a geologist talking to him of granite, gneiss, and limestone, or of the junction and inclination of strata. The young enjoy the heavens and the earth as a susceptible painter or an ingenuous poet does. In this first paradisaic pleasure is planted the seed of the perception of an intellectual world, whose secrets will not be fully ascertained and understood even after the longest and most active life of scientific effort. But most teachers, by the dispersion of these simple impressions of nature, forcibly destroy these earliest pleasures of children, the brightness of the imaginary world which they see. Even the great Pestalozzi falls into an error on this point, when he says that "It is not in the woods or meadows that the child should be put, to become acquainted with trees and plants. They do not there stand in the order best calculated to display the characters of the different families, &c." That is, we ought to take the child into a botanic garden, arranged on the Linnæan system, so that he may study plants in the order of their species. To me this seems like saying that the child ought not to hear a symphony, because that would be a mere chaos of sounds to him; he should rather have played to him, first, the first violin part, then the second, then the parts for the bass viols, the flutes, clarionets, trumpets, &c. It is true that in this way he would hear the separate parts, but not the bond of thought which makes them a symphony. Jahn was much more judicious in his gymnastic walks, when he said, not "we are going botanizing, geologizing, or entomologizing," but merely, "we are going *to walk*." How much more naturally do our youth, when the bird-of-passage instinct seizes them at the university, wander through the father-land and rejoice in its grandeur, and lay it deeply to heart, without any idea of a premature, and painful, and usually repulsive studying of any particular subject. I hate this analyzing and lifeless elementarizing of the first youthful impressions of nature—this foolish, superficial, heartless, frivolous directing of the understanding prematurely out of its natural path—which is so sure to chill the youthful heart and render it old before its time. The utmost attainments of a mind thus trained must be—unless aided by remarkable natural qualities—to observe with the bodily eye; to use the reason, but not with pleasure; to derive mere lifeless ideas from creation; and to represent the objects thus conceived in equally lifeless descriptions, like the ghastly wax figures which afford a repulsive imitation of living men.

There is, however, a mode of learning intelligently, which is not chilling, but thoroughly genial and appropriate. But, it should be observed, the mode of instruction just described has a diametrical opposite in that whose advocates despise the adult reason, and would constrain themselves to remain children always—to feel, and only to feel. Among these advocates are prominent the numerous disgusting, pitiful poetasters of our time, who undertake to deal with nature in so remarkably childlike a manner. Their false simplicity and innocence is to real childlike innocence what a French actress, who plays the smart chambermaid, is to a truly noble young damsel. He who feels himself a man should endeavor in manly wise to understand and represent nature with as deep poetic feeling, and as gigantic understanding, as that which Shakspeare used in delineating men and life. But I return to my subject.

If the first mental growth of the young is watched over in holy quiet, the results of the mode of training which I recommend, how prosaic soever they may appear, will not be prosaic. The recollection of youthful devotional premonitions will become a hope of realizing them, and will enliven, strengthen, and inspire every effort. After you have enjoyed the unmingled, complete, rich pleasure of a full symphony, you willingly undertake the wearisome labor of becoming familiar with each part of it; for each is to you not a dead thing, but a living portion of the whole symphony, whose collective remembrance lives in your soul. And if now, knowing all the separate parts, you hear the symphony again, you hear with pleasure both each separate part and the united sound of all; and your apprehension of the whole symphony, previously simple and obscure, develops and becomes clear.

In a similar manner the learner proceeds, from passively offering himself to receive impressions, from an artless susceptibility to the collective impression produced by the locality examined, to an active effort to distinguish this impression into its component parts. The great compound picture of the district about him divides into innumerable little ones, of towns, men, animals, trees, flowers, and in like manner do the mountains—for instance, their minerals, and their structure.

What has been said of the method of geognostic study, both of its rudiments and of its ultimate purpose, is applicable, as we shall see, to other branches of natural science.

V. SCIENCE AND ART.

"As the susceptible painter, the ingenuous poet, rejoice in the heavens and the earth, so does the youthful heart." And, I may add, the future geognosist. But, it will be asked, does this laborious and prosaic workman proceed from the same initial point of education as the passionate and delicate painter? I answer, decidedly, Yes; and, I add, other departments of art begin, in like manner, coincidently with other departments of science. If a boy loves flowers, he may become equally a botanist or a flower-painter. The celebrated painter of animals, Paul Potter, the author of "*Reynard the Fox*," as well as the great zoölogist, Cuvier, all, as boys, took delight in animals, and had an eye susceptible to them. A liking for beautiful mathematical bodies may characterize a future mineralogist, or mathematician, or architect. Susceptibility to colors indicates a future painter or a future optician; and an ear for music, either a musician or an acousticist. Nor do the different roads of the artists and naturalists, who proceed from the same point, ever become entirely separate. Michael Angelo was a great anatomist; Durer wrote on perspective, and on the relations of the human body; Otto Philip Runge constructed a theory of colors. Goethe sang of flowers, and wrote his valuable "*Metamorphoses of Plants;*" he had an eye seldom equaled for the beauty of mountains, and he both observed and described them in a masterly manner, according to their geognostic character. A man who is endowed with susceptibility to beauty, and the artist's power of representation, and also with clear and energetic thought, will produce scientific works containing beauty, and artistic works of profound thought. It is not only true that we find united, in extraordinary men, great capacity both for science and art, and that the first rudiments of scientific and artistic training are frequently the same, but we see that many arts need the aid of science, and many sciences of the arts. The architect must understand mechanics; the painter, perspective, anatomy, and the chemistry of colors: botany and zoölogy require good pictures of plants and animals; and mineralogy, clear and accurate drawings of crystals.

Science seeks principally truth; but art, beauty. While the botanist endeavors to establish as correctly and completely as possible the idea of the species Rose, the painter tries to present his ideal of a *Rosa centifolia;* and the poet leads us, through the gardens of poetry, to roses of unimaginable beauty. While the Greek sculptor carved the Lions of St. Mark, Cuvier gave us an excellent description of the king of beasts. From the school of Werner came scientific works on mineralogy and mining, and likewise the miners' songs of Novalis.

I have lengthened this discussion, in order to bring out a pedagogical rule to which I have already referred in speaking of teaching geognosy. It is, to have constant reference, not only at the beginning but throughout all the course of instruction in natural science, to the beauty of God's works; to cultivate the pupils' susceptibility to this beauty; and to develop, along with the receptive faculty, however directed, the power of representing as perfectly as possible the thing seen: so that, for example, the boys shall learn not only to examine and recognize plants and crystals but to draw them. It is more necessary to refer to this, because the beauty of which I speak is so wholly indifferent to so many teachers. They make no endeavor to learn whether their pupils take such pleasure in flowers, and examine them with the same penetrating attention that a flower-painter uses. They rather make their tyros analyze them, pull them to pieces, physically and mentally count their anthers and pistils, &c. Before the boys have even gained a thorough and familiar idea of the flower, they are made to endeavor to get an idea of its species in this destructive manner.

Especial haste is used, in those departments of natural science which are based on mathematics, in proceeding from observation by the senses to abstract mathematical theory. It is no wonder that this is the case in our day, when atomistics and mechanics, in a mathematical form, are every where forcing themselves forward, and where so many are seeking after mere bare truth only, without any reference at all to beauty.

VI. MATHEMATICAL AND ELEMENTARY INSTRUCTION IN NATURAL SCIENCE.

Mathematics are the root and blood of a knowledge of the laws of nature and of art.* It reveals the laws of crystallization and of chemical unions; the number of petals and of anthers; the figure, size, and motions of the stars. It is the soul of the firmness of mighty cathedrals, of harmony in music; it gives the painter proportion and grouping, and lives in the hexameters of Homer and the choral measures of the tragedians.

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* "The form was in the archetype before it was in the work; in the divine mind before it was in the creature."—Kepler, "*Harmon. Mundi,*" I.

But can we for such reasons, when instruction is required in music, drawing, &c., answer, Yes! we teach mathematics, and shall thus at least indirectly prepare the pupil for the studies which you wish? By no means; and as little would it serve where instruction in natural science is required. These considerations lead to the very important question of the relations between mathematical instruction and instruction in drawing, music, natural science, &c. On this point there are two opposite opinions; one of which would place mathematics at the beginning of the courses, and the other at the end.

In support of the former of these doctrines, it may be said, "If we grant that mathematics form the theory of laws of nature and art, what could be more appropriate than to begin with it? When the scholars have gained a thorough acquaintance with pure mathematics, they thus become capable of easily mastering any natural science, or of acquiring knowledge and skill in the arts. In the pure mathematics is the point for setting the lever which will move the world; it is the center from which light radiates to innumerable points on the circumference—to innumerable sciences and arts. Should the teacher rather choose to select from their multitude one point or a few, and thence seek to reach the center?"

This view is plausible, but untenable.

The history of the arts and sciences is opposed to the idea of beginning with instruction in pure mathematics. The course of development of the human race has not confirmed its propriety, either. The fact was not that minds of a purely speculative character, operating entirely within themselves, developed pure mathematical truth, which others afterward applied to nature and art. In this sense, there have been almost no applied mathematics. The truth is, that a gradual and deliberate apprehension of purely mathematical relations has developed in such departments as music, surveying, architecture, drawing, astronomy, geology, &c.,* from a beginning of purely material conceptions, yet guided by the principles of mathematics, hidden within them as a human instinct. From this heterogeneous world of phenomena its common elementary spirit, the spirit of pure mathematics, arose subsequently. This succession of the sciences can not be too carefully remembered, for every scholar has to go through one more or less similar.

It is also a great error to believe that a person thoroughly grounded in pure mathematics is thus fully prepared for all the arts and sciences which are based on mathematics—that he can juggle with them by means of his formulas. Is it supposed that one who has learned general bass—the mathematical basis of music—has by that means trained his feelings and his ear? Does knowledge of perspective make a painter; or of metrics, a poet? Is one who knows how to calculate a crystal a mineralogist?

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* How completely new is the world of beautiful inter-related mathematical bodies which has arisen from the investigations into natural crystals, and how utterly were the great early mathematicians without an *a priori* knowledge of it!

On the contrary, the reason, during those years when it is dormant, but the senses are active and hungry, is powerfully stimulated by pure mathematics, and developed at the expense of the senses. The boy, under an unnatural mental excitement, and thrown into this wholly subjective train of thought—this activity of the reason exclusively within itself—loses his quiet, peaceful, and natural bodily sensitiveness to the material creation. He will even, in time, lose the humility with which he sought after the laws of God's world, with self-sacrifice and sincere industry, and with which he felt a pious joy in discovering them; and he imperceptibly becomes a scientific egoist, having no feeling for faith in any thing except in his own mind and mental labor; and who, even if he discovers a natural law, can only rejoice in it as in the child of his own intellect—as if he were a lawgiver to the creation. I am not exaggerating. Only consider any one of many trained naturalists, who have been educated in this way, whether they are not such as I have said.

If, now, we would preserve a natural and proper susceptibility to nature in our pupils—if we would protect them against such a premature and bald forcing of the growth of the understanding—we must permit them to begin their studies with the natural and easy observation and practice of youth; and gradually bring them forward from this to a properly pure mathematical mode of investigating and training.

Mathematical instruction, too early put in the place of physical observation of nature, is so far from compensating for it that it is injurious to it. Bacon's observation is here eminently in point: "Mathematics should terminate the study of natural philosophy; it should not introduce or create it."*

VII. INSTRUCTION IN MINERALOGY.

With Werner opened a new era not only in the science of mineralogy but also in the method of instructing it. Before him, scientific mineralogy was scarcely known; or the thorough knowledge, description, or classification of minerals. Naturalists were satisfied with understanding and teaching such of their peculiarities as were most obvious. Gold, they said, is yellow, bright, and heavy. But these same terms might be used to describe copper pyrites, or iron pyrites—as in Messing. Werner perceived how defective were such descriptions; and how far they were from being sufficient to describe the peculiarities of a mineral or a species—and still more to distinguish with entire certainty one mineral, or one species, from another.* He believed that not merely this or that prominent characteristic of a mineral, but all of its characteristics, the most obvious and the most recondite alike, should be understood and expressed. It was in this belief that he wrote his "*Theory of External Characteristics*," (*Lehre von den Äussern Kennzeichen.*)† What he here aimed at was, in fact, an exhaustive statement of the sensible characteristics of minerals; though all that he stated himself to seek was the best, fittest, and most invariable expressions for their characters, their species, and their grades. The motto of his book was "Be not facile in choice of words; in order that you may agree in things." And he arranged these characteristics in a definite and well-adjusted order.

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* What has here been said will be illustrated by subsequent examples. Further details will be found in the chapter on Geometry.

In describing all the peculiarities of a mineral, he paid all his attention to the order, clear comprehension, and expression of its external characteristics. He endeavored to set forth in words the whole of the peculiarities of the mineral, in the most correct manner, so that his description should fully state the elements of the whole impression made by the mineral upon the senses.

In a similar manner he described a species of minerals; but with this difference, that, whereas the single stone has one definite color, one definite mode of crystallization, &c., the species to which it belongs usually includes a variety of related colors and crystals, which must be described.

Not to enlarge upon the brief general theory of classification with which Werner began, he commenced his mineralogical lectures proper with instruction in the external marks. This was followed by a description of the species closely connected with it, and by a rapid exhibition of the groups described. His oral lecture, which was of great value in itself, was the prominent feature; and the actual display of the groups of minerals was quite subordinate.

"Words are good," says Goethe, "but not best." This was true in the present case. I have already mentioned how we strove in vain not to be confined to a mere description of the minerals, but to obtain a knowledge of the minerals themselves; and how it was chiefly this unpleasant experience at Werner's lectures which afterward caused me to work out another quite opposite method in teaching mineralogy.

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* It is this defectiveness in descriptions which leaves us so often at a loss to know what mineral the early writers—Pliny, for instance—meant by any given name.

† This work appeared in 1774, and was translated into various languages. Werner was twenty-four when he wrote it.

It seems to me the natural way of beginning, to let the pupil first examine the mineral, without at the time enlightening him with any oral explanation whatever. In this way he receives a first simple impression on the senses. If this impression is remembered, he may then be told the names of the minerals examined.*

It is important to begin with instructing in external characteristics, because this instruction communicates the results of the most thorough analysis of the general idea into its constituents. It would be wrong to begin by making the pupil observe in one mineral the weight alone, in another only the color or only the hardness; for such a method would break up the quiet, thoughtful, receptive mood proper to obtain an apprehension of the total idea.

But after having mastered this total idea of the mineral, the pupil must, especially if he desires to compare it with similar minerals, and to distinguish it from them, reduce this idea to its constituent peculiarities, even to the varying modifications of these peculiarities. For instance, on comparing gold with iron pyrites he will find both yellow; but there is a great difference between the pure, clear yellow of gold, and the pale whitish of the pyrites. He finds gold to be soft and malleable, while the brittle pyrites will give off to steel abundant sparks, large and smelling of sulphur, &c.

Thus, by a careful comparison of the separate peculiarities of both minerals, their great difference will clearly appear; whereas, without such a process, only an indistinct notion of them would be had. Indeed, there are many minerals of which the general idea would lead into great errors without a closer analysis of their qualities. Thus, the student would be much more likely to class a beautiful yellow polished crystal along with the topaz than to rank it as similar to a piece of insignificant, opaque, homely, white quartz, though the latter is its proper place.

Werner's theory of external marks is very simple, and quite sufficient to enable mining officials to deal with the minerals which they are likely to meet with. These officers can not go into delicate investigations. For example, the purely scientific mineralogist determines the specific gravity of a mineral by means of a fine balance. The specific gravity of water is taken as the unit, and that of the mineral is reckoned from it, and carried out to three or four decimal places. The specific gravity of water being thus 1,000, that of gold is 19,258. The miner can not usually attempt so accurate a determination; but he can make that which Werner gives. He makes five grades of specific gravity; and very judiciously taught his pupils to determine these, without balances, by poising the substance in the hand. He required them to be able to say only "Gold belongs among the extraordinarily heavy minerals;"* not that "its specific gravity is 19,258."

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* The commencement of mineralogical instruction is entirely like that of geognosy and botany; in every case, a vivid and permanent impression should be had of the total idea before any analysis *of it.*

What Werner did not require from mining officers we can still less require of new beginners in mineralogy; they must first learn to estimate specific gravities by the hand.

Werner's mode of dealing with other points was similar. He treated his subject exhaustively, but was very far from giving a delicately accurate physical description of every separate item; nor will he be found to furnish a mathematically developed crystallography.†

As crystallization is one of the most important, if not the most important, characteristics of a mineral, I shall devote a little space to it.

The angles of crystals are mathematically true and unvarying; but the size of the side varies infinitely, without affecting the angles. Thus, for instance, we seldom find a cubic crystal with six equal sides; but the right angles of its sides and corners are invariable.‡

The beginner will find his study of the polyhedral crystals much perplexed by these variations of the size of the surfaces; and, to assist him, he is usually furnished with models, in which the corresponding sides are made equal. His model for the cube, for instance, has six equal squares; that of the octahedron, eight equal and equilateral triangles.

Above all, the beginner should be drilled in the recognition of crystals by the eye; and his perceptions of their beautiful symmetry, and of the various relations connected with this symmetry, should be trained.

I can not here set forth the details of the method which I should recommend in teaching mineralogy.§ I shall only observe, in general, that the teacher must be careful not to carry the pupil too soon from the use of his senses to the mathematical part of his study.‖

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* This class includes minerals whose specific gravity is over 6,000.

† It is not meant that the teacher ought to restrict himself entirely to Werner's theory of the external marks; there are many points (in crystallography especially) which must be made more clear and definite than he made them. But, like Werner, the teacher must never lose sight of the elementary attitude.

‡ More will hereafter be said on this point.

§ On this point I refer to the chapter on Geometry, and to my "*A B C-Book of Crystallography*," (*A B C-Buch der Krystallkunde.*)

‖ What here follows may be used as additional to what was said above of the relation between mathematical and elementary instruction in natural science.

It is enough for the beginner to know that the cube has six sides, twelve edges, and eight corners. But that the edge, that the diagonal of a side, and the axis of the crystal, are to each other as the square roots of 1, 2, and 3, is a fact with which he has no business; nor has it any thing to do with the recognition of natural crystals. Nor need he be given the use of certain mathematical aids. He should describe the twelve edges of a cube standing on a horizontal surface thus: four horizontal edges above, four below, and four vertical ones. But he should not say, out of Euclid, "There are six quadrilateral surfaces, and the cube has therefore $6 \times 4 \div 2 = 12$ edges. That such a calculation does not afford a full description of its form appears from crystals, whose surfaces consist of equal numbers of sides, but not of sides of the same form. Vesuvianite, [*das Leuzitœder*,] for instance, has a surface of twenty-four trapeziums, and therefore $24 \times 4 \div 2 = 48$ edges; but twenty-four of these are entirely different from the other twenty-four.

A beginner, if he understands subtraction, can by another formula ascertain very easily the number of angles of a body, of which he has not the slightest knowledge through his senses. This is, that the number of angles of a body equals that of its edges, diminished by that of its surfaces less two.[*] If, therefore, I tell the beginner that a certain body has 540 edges and 182 surfaces, he can instantly say by his formula that it has $540 - 180 = 360$ angles. But, if I give him the body itself, he is not in the least able to form such an idea of it as to determine that some of its angles are formed from six surfaces, &c. He may perhaps not even be able to state, without first reasoning with himself, how many surfaces, edges, and angles there are in a cube. In short, his formula serves him, according to the familiar German proverb, as an asses' bridge. He neither understands it nor what he discovers by its means; and the readiness with which he ascertains results by its use hinders him from strenuous labors to discover the right thing in the right way.

But how, is the next question, shall the pupil learn to analyze the external marks of minerals—to consider the mineral with reference to each individual characteristic? I reply: The best introduction to this knowledge is to take him through a collection arranged by external marks; in which each group, as far as possible, shall lie before him in the order of its colors, crystallization, &c. The teacher will need to give but very little aid—only to put into words what the pupil sees, or to require the more advanced pupils to do it themselves.

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[*] $A = E - (S - 2.)$ From this, E or S can be determined, if the number of angles and surfaces, or of edges and angles, is given.

This investigation of the collection should follow the general theory of external marks; which is indeed only an arrangement of the characteristics which the pupil has learned to know from the examination of single species.* When the pupil has in this way attained a moderate degree of skill, in the objects and technics of the study, then, and not before, he is prepared to read mineralogies. Where the mineralogical author has translated minerals and species into words, a pupil thus trained can translate the words back again into minerals. Every word is to him a living incantation, which awakes the slumbering ideas previously impressed upon his mind.

But, in order that each word may awaken the corresponding conception in the mind, all ambiguity must, as we have already shown, be avoided, and only one fixed term be used for each mineral and each characteristic. This was what Werner meant by his "Be not facile in choice of words, in order that you may agree in things." And the converse is true: Be not facile in selecting things, in order that you may agree in words. To understand words is only possible when things are understood. The utmost definiteness in terms, the most accurate expression, will be useless to the scholar, unless the most definite corresponding impressions exist in his mind, to be called up again by those expressions—by words. "No description," says Forster, in his "*Views on the Lower Rhine*," (*Ansichten vom Niederrhein*,) "will convey to another what my own eyes have received directly from the object, unless he has something with which to compare that object. The botanist may describe to you a rose with the most appropriate terms of his science, may name all its parts even to the smallest, may state their relative size, form, position, substance, surface, and coloring—in short, he may give you such a description as, if you had the rose before you, would leave nothing to desire—and yet it would be impossible, if you had never seen a rose, for him thus to call up an image of it which should correspond with the original. No painter would dare undertake to paint from description a flower which he had never seen. But take but a single look, one single observation with the senses, and its image is indelibly imprinted upon the mind." Can any one doubt whether Forster is right, or that learned man who flattered himself that he had so perfectly described a certain cabinet of antiquities that it might safely be entirely destroyed, because a skillful sculptor could completely restore it from his description? If Forster is right, which I do not doubt, then it must needs be admitted that the endeavor is utterly foolish to teach a knowledge of minerals by mere oral instruction and reading of books.

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* For further details on this point see Appendix II.

I have thus endeavored to describe the method of my instructions in mineralogy, and its reasons; and to show how the pupil may be gradually carried onward, from his first silent and simple observation of nature, to a full and intelligent comprehension and description of minerals and all their peculiarities.* It remains to offer some observations on the traits of pupils.

VIII. CHARACTERISTICS OF PUPILS.

There is a universal method of instruction, applicable to all pupils, and based upon the nature of its subject, which is the same for all pupils, and upon the universal qualities of human character. I have hitherto discussed this method, which was that followed by me in teaching mineralogy.

It is usually thought that he who is master of a department of study is a qualified teacher of it; too little regard being had to his knowledge of his pupils. And thus many teachers are deficient in an understanding of the universal relation that exists between the pupil and the study, and in the skill in teaching which depends upon that understanding—the universal method.

I soon learned, however, not usually instructing by the ordinary method of lectures, how little there is in common in mineralogical instruction and in the universal method. I found pupils of so distinctly different and even opposite characters that I saw plainly that it was impossible to instruct them all in the same way. And the longer I taught the more I felt the necessity of studying the peculiarities of pupils with the same attention which is usually devoted only to the subject of instruction; that the teacher of natural history should be able to draw up as good a monograph upon single scholars as upon single species. But in order to pay attention to each individual pupil, and to be able to instruct him in a proper manner, the teacher must be such a master of his subject that no difficulty will rise to embarrass him while he is teaching. In this mode of regarding each single pupil I have had many experiences, bad and good; of which I will here mention a few.

And, first, the bad ones.

Complaints are made of inactive muscles, of weak arms, shoulders, and legs; but much more complaint should be made of imperfect senses, and especially of eyes dulled almost to entire insensibility. This I have found, to my sorrow, in many pupils, particularly the older ones. And no wonder. Brought up in the city, among books, their eyes were directed to almost nothing except reading and writing, a sad and grievous slavery, in which the unfortunate senses were left almost destitute of any pleasure, stimulus, or refreshment, and without any cultivation by use. The eyes of the younger pupils were more active, because they had not been so long in slavery. There were however some exceptions among the older ones, in the cases of those whose early experience had obliged them to use their eyes; as in some miners and smelters, young people from the country, and a painter's son.

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* It is only after having reached this point that they should take up mineralogical chemistry.

This dullness of eye was partly bodily, but chiefly mental. It was only very gradually that the torpid bodily senses grew more acute, and that the active reciprocal stimulating influence between mind and senses, so long disused, was re-established. What made this re-establishment specially difficult was the fact that most of them, brought up under oral instruction on all subjects whatever, partook of the prevailing belief that every thing in the world could be communicated orally, even mineralogy; and that therefore there was no need whatever for a direct observation of nature by the senses. They were in despair at any attempt to induce them to make such observations; and intimated that their teacher was pre-eminently endowed for that purpose by nature, and that it would be far wiser for him to tell them what his good, well-trained eyes saw in the minerals than to try to make them see, with their incapable and untaught eyes. There were but few of them whom I could make understand why mere oral lectures were useless in this pursuit; and I succeeded but with a few, who were practicing bodily exercises. I said to them that they needed to exercise their eyes in this study, as much as they did their arms and legs in their gymnastics; and that they might as well expect to learn to run and leap by attending lectures on Jahn's Gymnastics as to become acquainted with minerals by lectures on them. This made the case clear to these few.

Again, there was another class of pupils with whom I had great difficulty in being understood. This new requirement, to use their torpid eyes, and to examine the minerals attentively and quietly, seemed very extraordinary to them. It was as if I was making them read a book in a foreign language, which I could translate, and which, out of obstinacy, I would not. Innumerable questions betrayed their thoughts. I ought at least to tell them the names, before they examined the minerals. And when I replied, that those pupils who gained clear and definite ideas of the appearance of the minerals, without knowing their names, would please me infinitely more than those who should remember their names without their appearance, they did not understand me; for they had usually been accustomed, in their study of geography, history, &c., to satisfy their teacher with the emptiest memorization of names. I had the most trouble with some grown-up persons, whose powers of thought had been unnaturally stimulated, and who had thus lost that quiet mood of mind which is indispensable for enjoying the benefit of a real thorough and intelligent receptivity. They were incessantly interrupted and diverted by notions that occurred to them—the untimely misconceptions of a cursory, superficial mode of observation.

But this will suffice for these unfortunate experiences; which I do not lay to the account of my pupils, but which were the necessary outgrowth of the period. I am the less disposed to blame my pupils for these things because I myself, when a scholar, had the same experience, even sometimes to a greater degree. I was even earlier in my conviction that every thing could be learned out of a book; and in feeling the same despair at being set to use my eyes. During subsequent years, especially, I have enjoyed a large overplus of pleasant experiences, even with pupils who were at first exceedingly awkward. If the visual powers are once awakened, if the least mutual stimulation is awakened between the senses and the mind, the susceptibilities of the mind and the senses increase with every day.

It appears, from what has been said, that every pupil develops himself in his own peculiar manner. Some of them were lucid, intelligent, prompt, appropriate, definite, and certain in answering; while others were more inclined to feeling, quiet and withdrawn within themselves, slower to understand and later in attaining power of expression.

Some seemed to have equal talents for every thing; while others were inclined in some one direction. Some, particularly, seemed to have a remarkable susceptibility to color and luster, but to be quite wanting in perception of form; while others were precisely the contrary, having an acute eye for form, but being deficient in feeling for luster or color. These last were often inclined to proceed quickly from actual observation of objects to mathematical treatment of them; some even carrying this tendency so far as to begin it altogether prematurely, and as to be entirely indifferent whether an octahedron was the most beautiful diamond, or a wooden one. In this way they forgot the most important consideration for them; namely, that they were dealing with the marvelous creations of God, not with the mere thoughts of men.

The active and sensitive eyes of those who had a feeling for color and luster, on the contrary, became gradually educated to a full apprehension of the crystals, in all the beauty of their forms and modifications. They also comprehended the mathematical laws of these forms, so far as they could be deduced immediately from actual observation of them; but showed a want of facility in mastering the pure mathematics of the subject, and a dislike for it.

Some pupils showed similar tendencies toward particular groups of minerals, and dislikes for others; and they mastered more easily a knowledge of those they liked, even when they seemed, to one free from any prepossession on the subject, much more difficult than the others.

These and other peculiarities of pupils, which I can not fully describe without giving an account of each individual pupil, became the cause of my opinion that teaching exclusively in one general method is quite impossible.

IX. INSTRUCTION IN BOTANY.

In the private school at Nuremberg, where I instructed for three years, I also taught botany. The plants used were found in the neighborhood of the city, or in the garden of the institution. The most common garden-plants, as being best known and most useful, were made most prominent—as domestic animals were in zoölogy. When the boys returned from their excursions, the plants they had collected were laid fresh together on a table, examined, and named. At the end of the lesson, each pupil entered the names on a paper, and afterward in a book, divided as follows:—

TIME.	NAME.	PLACE.	REMARKS.
May.	Granulous Saxifrage.	Mögeldorf.	Has a granulated root.

The pupils might write under "Remarks" whatever they chose; and each, of course, inserted what had struck him most in looking at the plant. I have already observed that I considered it a very great error to require from beginners a complete and exhaustive description; inasmuch as this must be based upon a previous analysis of a total conception, which they have not yet attained.

These registers of plants served afterward as botanical calendars, from which could be seen where and at what time certain plants could be found; as, saxifrage at Mögeldorf, in May, &c. They also now began, of their own accord, to classify the species into genera. A boy brought in a plant, and was told that it was a speedwell, and after a few days he brought in another, and very correctly said, "Here is another sort of speedwell." So simple and natural, in strongly-marked plants, is the arrangement into genera of species.

It will be found judicious, lest this scientific examination should make them indifferent to the beauty of the flowers, and make them too exclusively occupied with the use of the intellect alone, to employ *such as show* sufficient taste for it, in drawing flowers.

During the first summer my pupils acquired a knowledge of between three and four hundred varieties. This is rather too great a number than too small; it is better to get a thorough and permanent acquaintance with a few plants than an indistinct and superficial one of many.

X. NECESSARY INCONSISTENCY.

Bacon says,[*] "There is scarce any entrance to the domain of human science than to the kingdom of heaven, into which one can not enter unless he become as a little child."

The poet[†] makes a similar demand upon the public, at the representation of his dramatized plays; where he demands that the spectators shall for a time forget their education and their knowledge, and "become children again." But the people answer him, "We thank God that we are no longer children; our education cost us pains and sweat enough."

I have before complained that the pupils at our schools of learning dive so entirely among books and lectures—in a world of words, and so entirely shut out from any active intercourse with nature and life—that they have usually, by the time that they enter the university, forgotten the first impressions of nature which they received in childhood, and seem even to have lost the child's capacity of receiving them. Their minds, in this case, must now be first awakened anew to nature, and brought back to their former childlike condition, not exclusively by actual observation, but chiefly by words—by the stimulus of properly-directed oral lectures.

It was from this point of view that I endeavored to perform my task of lecturing on general natural history. And even in my lectures on mineralogy, I accommodated myself to the necessities of the case. That is, although I regularly instructed my younger scholars in the manner I have described, yet in the subsequent academical lectures I varied, in one respect, from it. In order to render oral instruction possible, I was forced, whether I would or no, to begin with instruction in external marks; with a practical explanation of the technical mineralogical terms. In other respects I remained quite true to my earlier method.

XI. "MYSTERIOUSLY REVEALED."[‡]

Instruction in mineralogy, botany, and zoölogy leads, as we have seen, from actual inspection to the development of the ideas of species, genera, &c., which are component parts of created beings, and are revealed by examining their appearances. These ideas connect what are of like kinds, and separate them from those unlike them.

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[*] Nov. Org., I., 68.

[†] Tieck, in "*Puss in Boots*," (*Phantasus*,) 2, 247.

[‡] "Thou stand'st mysteriously revealed." Goethe's "*Winter Journey to the Harz*." (*Harzreiſe im Winter.*)

But when we have correctly learned and expressed these generic ideas, have we thus arrived at the actuality of their existence?—have we learned what is the essence of their being and life?

Haller, who all his long life unweariedly and honestly investigated nature, may answer:

> "No spirit, however creative, can pierce the secrets of nature."

No created spirit he meant, of course; the Creator is to be excepted. And the great Bacon agrees with Haller:[*] "It is falsely claimed that the senses of man are the measure of things; on the other hand, all the apprehensions, both of the senses and of the intellect, correspond to the essential nature of man, not to that of the universe. The human understanding is like an uneven mirror in reflecting objects—it mingles up its own nature with their nature, and confuses and colors them." And Newton's doctrine is the same, when he says, "We see only the forms and colors of bodies, hear only their sounds, feel only their outer surfaces, smell only their perfume, taste only their flavor; the essence of their being we can perceive by no sense and by no reflection."[†]

Goethe at one time controverted Haller's assertion, but afterward agreed with it. He says,[‡] "The true, identical with the divine, will never permit itself to be directly perceived by us; we discern it only in reflections, examples, symbols; in single and related phenomena; we become aware of its existence as an incomprehensible life, and yet can not escape the desire of comprehending it."

Cuvier repeatedly admits that there are incomprehensible mysteries in his science. Thus he says, "The operation of external things upon the consciousness, the awakening of a perception, a conception, is a secret impenetrable to our reason." The great zoölogist, who has surpassed all in investigating the laws of the animal creation, comes upon the question—what is life? and how does it exist? and he confesses that these important questions can not be answered; that life is a profound mystery.[§]

We often hear the confession, "How vast is that of which we are ignorant!" We readily admit that we know nothing of the interior of Africa, or of the lands near the poles; that probably many new plants, animals, and minerals may be discovered there, and the like;

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[*] Nov. Org., I., 41.

[†] Principia, 3, 1, 675. (Le Seur's ed., 1760) "Their essence we can perceive by no sense, no reflection; and much less have we any idea of the essential substance of God."

[‡] Works, 51, 254.

[§] Cuvier's "*Animal Kingdom*," translated by Voigt, vol. 1, 9, 10. "All the endeavors of physicists have been unable to inform us how life is organized; whether of itself, or from *some external* source." "The existence of organized bodies is therefore the greatest secret *of organic economy*, and of all nature."

but what if we are convicted of universal ignorance of every thing included in the domain of science? I repeat: Have we effected a perfectly exhaustive investigation of any single existence or fact in nature? Is it not rather the case that every such fact has both its comprehensible and incomprehensible side, and, like the moon, turns one side toward us, sometimes lighter and sometimes darker, but keeps the other always turned from us?*

Did not Cuvier, so mighty in investigating the laws of the animal creation, yet find each animal a riddle, and was he not thus brought to confess that life was a riddle to him?

When the mineralogist measures and computes, with his utmost accuracy, the primitive rhomboids of calcareous spar, and determines mathematically its relation to the many hundreds of crystallized forms which that mineral offers, does he, for all this, understand these rhomboids? Can he tell how it is that it becomes possible to split them in three directions, parallel to the three parts of rhombic surfaces, so that each surface of cleavage shall be a perfect plane—polished, and with angles mathematically true? We shall look to him in vain for answers to these questions.

The astronomer, of all men, claims to be the most scientific. He computes with accuracy the movements of planets, and comets, and moons, at vast distances of time and place, and demonstrates the most delicate observation in his astronomical prophecy as the correctness of a problem is demonstrated by the proof. Is there here also room for ignorance? I reply: Count one hundred while the minute-hand of a watch is going from twelve to one, and go on counting at the same rate. You can then predict with certainty that when you have counted six hundred the hand will stand at six, and when you have counted twelve hundred it will have completed its circuit. But notwithstanding this prediction, you may perhaps never have opened the watch, and may know nothing whatever of its construction or mechanism. Even so is it with the astronomer. However accurately he can compute the path of Jupiter, can he for that reason tell what are the essential qualities of Jupiter?† What man can even answer the question, What is the essential nature of the earth—of this very earth on which you live? And if any one should pretend to have an answer to it, he may be replied to with the reply of the Earth-Spirit in Goethe's Faust:

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* "Because that which may be known of God is manifest in them." "For we know in part * * * but when that which is perfect is come, then that which is in part shall be done away * * * now I know in part, but then shall I know even as also I am known."

† Newton, who, as we have seen, considered the real essence of all bodies entirely incomprehensible to man, would of course reply that such requirements could not be satisfied. The originator of the theory of gravitation, he repeatedly declared that he knew only qualities of gravity, not its essence. Thus he says, "I have explained the phenomena of the heaven and of the sea by the power of gravity, but I have not assigned any cause for gravity." Again, having stated the qualities of gravity, he says, "But I have not been able to deduce from the phenomena the cause of these properties of gravity, and I offer no hypothesis." (Princip., l. c., p. 676.) And in like manner in the "*Optics*." (Clarke's ed., 1740, p. 326.) "There are efficient principles, such as gravity, whose existence is testified to by natural *phenomena*; but what are the causes of these principles has never been explained. Every

> "Thou art equal to the spirit which thou comprehendest—
> Not to me."———

Such considerations should not, however, lead to an apathetic despair of understanding any understanding of nature, but should only counteract the illusive notion that man can understand created things in the way in which only God, their creator, can understand them.* To us nature is "mysteriously revealed."

But, it may be inquired, what is the value of this discussion in a work on pedagogy?

I reply: A recognition of the wonderful union of revelation and mystery in nature, and the clearest possible perception of the boundary between them, will exercise a most important influence upon the character of the teacher and upon his study of nature.

The mysteries of nature will direct him in humility and earnestness toward eternity; while he will investigate what is susceptible of being known with conscientious and persevering industry, thanking God for every pleasure which he receives from discovering the beautiful and invariable divine laws.†

And how can this state of feeling and this knowledge in the teacher fail to have the greatest and most excellent influence upon his methods of instruction?

Any one doubtful as to the goodness of this influence will be convinced of it, if he will examine the bad influence exerted on their scholars by such teachers as are destitute of the knowledge and feeling which give it; who live in a narrow circle of overestimation of themselves. For them there are no mysteries; they can comprehend every thing. And then it most commonly happens that they fail to observe and learn what is really attainable, while they weary themselves in vain over the incomprehensible; and thus, instead of ascertaining divine laws, they hatch out a parcel of chimeras, which in their presumptuous blindness they set up as being those laws. The proverb may well be applied to them, that they make fools of themselves by thinking themselves so wise. And they make their scholars fools.

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where the qualities are manifest, but their causes are hidden." And again, "There are originating causes (*principia*) of motion, as gravity. But the causes of these I leave to be investigated."

* "*By* universal analogy."—(Bacon.)

† *As Kepler repeatedly* does.

XII. LAW AND FREEDOM.

Beginners are dismayed at the apparent irregularity of crystals. On comparing, for instance, the model of a cube, of six equal sides, with a cubic crystal of fluor spar, whose sides are very unequal, he fancies that, notwithstanding the right angles of the spar, there is by no means as entire a regularity in the natural crystal as in the artificial model.

To remove this error, we may first consider the way in which laws prevail in the vegetable world. When the botanist says of the lily that its blossom has a six-petaled campanulate corolla, six anthers, a sexfid, capsule, &c., a German lily will answer the description as well as a lily from Mount Carmel. And so do the carefully painted lilies in old paintings; they have a six-leaved corolla, six anthers, &c. Thus the generic description, which the botanist gives, applies to lilies of all countries and periods. The close adherence to the law is evident; but an ignorant person, on learning so much, might probably conclude that all lilies were all exactly alike, and that accordingly great monotony must prevail throughout the creation. Such was the idea of the electress who denied Leibnitz's assertion that no leaf was precisely like another; but all her endeavors to find two precisely alike were quite in vain. It would be equally impossible to find two lilies exactly alike, though they grew upon the same stem. "The law of the Lord is unchangeable," but their unchangeableness does not produce a disagreeable monotony among the individuals subject to it; but under its protection there prevails an agreeable variety and unconstrained beauty.

This appears still more clearly in the animal kingdom; most of all in the human race. Here the law becomes less and less apparent, and the freedom of the individual is so prominent that the wicked quite forget the power of God, either over individuals or the race. "The fool hath said in his heart, There is no God," but the pious finds peace in the love of God, and says, "I desire not to be free without Thee; let my will be thine and thine mine."

From this culminating point of revealed freedom and concealed law, to return to the silent mineral world. While the ungodly may fall into the delusion that he is entirely independent and free, we may take the mineral kingdom as the realm of entire dependence. Here we find no notions of freedom.

Freedom, in the moral sense, can be predicated only of men; the freedom, that is, of individual action. But a first suggestion, a dawn of this freedom, an evidence that God desires not a world of uniform puppets, but of free and independent creatures, is revealed in the realm of nature, by this infinite variety of individuals, included under one and the same generic idea.

And this is true even of the crystals of the mineral kingdom. If we find a crystal prismatic, six-sided, and terminated at each end by a six-sided pyramid, we shall find the number of surfaces, and the angles, invariable; but there is an infinite variety in the size of the sides of the prism and pyramids. No crystal is like another, any more than a leaf. And it is this very variety in size which brings out the beautiful relations* which do not appear from the model, because all its similar surfaces are of equal size.

The pupil's attention should be directed to these relations; and he will thus escape the mistaken idea that the natural crystals, instead of being really like the artificial model, are only attempts to be like it.

CONCLUSION.

It is my heartfelt wish that instruction in natural science, in former periods entirely neglected, may be increasingly given; but that it may be given in the right spirit and in the right way, so that the feelings, senses, and understandings of the young may be trained by it, from their early years, to a clear and ascertained comprehension of the creation—that other Holy Writ.

Any one imagining that such a course of training would enslave the senses, would most wrongfully confuse the right and holy exercise of the senses with their beastly abuse. For the natural philosopher uses his senses to the honor of God; and if he makes them serve base lusts and passions, he will by that means blunt and finally destroy their loftier susceptibilities. Therefore the teacher of natural history must, above all, urge upon his pupils the necessity of holiness; must contend against wicked lusts; must cultivate in them chaste and pure feelings, and childlike innocence of heart. He must seek to secure for them a consecration such as a divine would properly require in order to the pious study of the Holy Scriptures.

Such a devotional method of investigating the creation takes a more and more spiritual form. Mere mortal and bodily envelopes disappear: and immortal thoughts, rooted in God, awaken and stimulate to a higher life.

Thus also is developed the whole man. In the imaginative period of childhood, the material world, so rich in suggestions, surrounds and enchains him. His senses are being more and more developed, up to the period of adult life; they are the means for influencing his immortal soul. As he reaches the limit of earthly life, they begin to disappear; and we then complain that the powers of our eyes and ears are decaying. But let us not complain; let us herein recognize a token that in the man, his bodily senses sated with the phenomena of this earth, all things are spiritualizing and growing clearer; and that he is thus ripening and adapting himself for a higher life. All earthly things are ended; heaven is opening to us.

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* Such as the parallelism of the edges.

NOTE.

AIDS FOR TEACHING MINERALOGY.[*]—Besides the academical collection at Breslau, I made use in my instruction there of two smaller ones. The first consisted of only ten cases, containing specimens of all the important groups, and was intended for beginners; not only for their first inspection, but to afford some rough instruction in manipulation. *Fiat experimentum in re vili;* and accordingly this first collection was of little value; so that any little injury from unskillful handling could do but small harm.

After this the pupils came to the second collection, which occupied fifty-four cases. The specimens were small, but mostly fresh and clean. In going through with this collection I mentioned the names of groups; so that the pupils obtained an intelligent and actual list of names, and a general view of all the groups. Some details of colors and crystals were omitted.

It was only after this that I introduced them to the main collection, of three hundred and fifty-five cases. In going through this collection, the pupils might, as in the others, take each specimen in their hands, but must replace it in its paper box. Where it was useless or injurious to take them in the hands, as in examining the colors, for instance, it was of course not practiced. If the pupil has been made acquainted with the careful handling of the specimens, this method does not injure them. The collection is not intended merely for the teacher's scientific investigation, and still less for empty show; but principally for the instruction of the pupils; which can not be thoroughly done without permitting this handling. This purpose of the collection also decided me not to expend its income for expensive curiosities, or the novelties of the day, which are commonly of very small relative scientific value, and to the beginner of none whatever. In the place of one unimportant scrap of euclase can be bought a large number of instructive crystals of quartz, calcareous spar, &c. This principle is of course not applicable to collections which are not at all, or not entirely, intended for instruction, and which are sufficiently provided with all common specimens, and with incomes.

The chief collection was arranged generally on Werner's plan. According to this, the pupil had to go through the groups according to their separate peculiarities; first according to color, then transparency, then luster, crystallization, &c.

To afford the pupil a scientific gratification as soon as possible, I was accustomed to permit him, if capable, to take some single group, whose crystallization was easy, and go through with it; such as lead glance, fluor spar, &c. Thus he gained a first clear comprehension of the wondrous intelligence that pervades nature. If there were two pupils, perhaps not precisely equal, but of about equal, capacity, I caused them to go through the collection together; which was beneficial to both. On the contrary, nothing is more harmful than to class together in this way pupils of unequal capacity. The more capable is impeded, or wearied, by the slow progress of him who is less so; and the latter again despairs at the rapidity of the former. I kept a diary, in which I daily entered briefly the work of each pupil, and how he had done it. This is of the greatest use in tracing and guiding their development. If the number of pupils was large, I found the following arrangement very convenient. I had all the more difficult crystals numbered, according to Hauy's plates, and the number lay with each one. The pupils, who had made sufficient progress, made a written description of the crystals, and laid their paper next to the described crystal. Thus only a very brief comparison of their description with my own was necessary. If they agreed, well; if not, the pupil studied the crystal further, until the descriptions coincided—unless, indeed, there had been an error on my part. Of such an occurrence I am never ashamed. I do not desire to be to my pupils an undisputed authority, but a teacher who understands his duty to them; and his first duty is love of truth.

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[*] What is here said relates to my instructions in mineralogy at Breslau. No objection should be made respecting the richness of the collection there; for something can be done, even with smaller means.

VIII. GEOMETRY.

[Translated from Raumer's "*History of Pedagogy,*" for the American Journal of Education.]

THE school-days of the writer fell in the latter years of the last century. At that time the opinion prevailed that but few scholars had a talent for mathematics; an opinion, indeed, which seemed to be supported by the usually trifling results of mathematical instruction. Later defenders of this department of study, however, controverted this doctrine. It is not the pupils, they said, who are deficient in capacity for learning mathematics; it is the teachers, who have not the talent for teaching it. If the teachers would follow the proper method, they would learn that all boys have more or less capacity for mathematics.

When I remember how often even the more talented of my companions fell into despair from finding themselves, with the best inclination, unable to follow the instructions of their mathematical teacher, I find myself ready to agree with these defenders.

At the end of my university course, I went to Freiberg. At the mining school there, under the able instruction of Werner, I first became acquainted with crystallography, which had inexpressible attractions for me. The more I advanced in this study, and the greater my love of it, the more clearly I saw that crystallography was for me the right beginning, the introduction, to geometry. What if this is the case, I reflected, with others also; especially for students of a more receptive tendency, who are repelled by the rigors of logical demonstrations?

No one can quite escape from himself; and the reader will forgive me if, in the following views upon elementary instruction in geology, I exhibit too much of the course of my own studies in it. He can, however, abstract what is merely personal from what is applicable to others.

And now to my subject.

Formerly geometry and Euclid were synonymous terms. To study Euclid was to study geometry; he was the personification of geometry. His "*Elements,*" a school-book for two thousand years, is much the oldest scientific school-book in the world. Composed three hundred years before Christ, for the Museum at Alexandria, it was exclusively used in ancient times, and in modern times also, down to the eighteenth century.

To this imposing permanent eminence of Euclid's "*Elements*," for two thousand years, corresponds its great diffusion among civilized and even half-civilized nations. This is shown most strikingly by the great number of translations of it. It has been translated into Latin, German, French, English, Dutch, Danish, Swedish, Spanish, Hebrew, Arabic, Turkish, Persian, and Tartar.*

With few exceptions, there is the utmost harmony in praise of Euclid. Let us hear the evidence of a few authors. Montücla, the historian, says, "Euclid, in his work, the best of all of its kind, collected together the elementary truths of geometry which had been discovered before him; and in such a wonderfully close connection that there is not a single proposition which does not stand in a necessary relation to those preceding and following it. In vain have various geometers, who disliked Euclid's arrangement, endeavored to break it up, without injuring the strength of his demonstrations. Their weak attempts have shown how difficult it is to substitute, for the succession of the ancient geometer, another as compact and skillful. This was the opinion of the celebrated Leibnitz, whose authority, in mathematical points, must have great weight; and Wolf, who has related this of him, confesses that he had in vain exerted himself to bring the truths of geometry into a completely methodical order, without admitting any undemonstrated proposition, or impairing the strength of the chain of proof. The English mathematicians, who seem to have displayed most skill in geometry, have always been of a similar opinion. In England, works seldom appear intended to facilitate the study of the sciences, but in fact impede them. There, Euclid is almost the only elementary work; and England is certainly not wanting in geometry."

The opinion of Lorenz agrees entirely with that of Montücla. In Euclid's works, he says, "Both teacher and pupil will alike find instruction and enjoyment. While the former may admire the skillful association and connection of his propositions, and the judgment with which his demonstrations are joined to each other and arranged in succession, the latter will enjoy the remarkable clearness and (in a certain sense) comprehensibility which he finds in him. But this ease of comprehension is not of that kind which is rhetorical rather than demonstrative, and this absolves from reflection and mental effort; such an ease, purchased at the expense of thoroughness, would be beneath the dignity of such a science as geometry. And moreover, Euclid himself was so penetrated with a sense of the derivation of the value of geometry, from the strict course pursued in its demonstrations, that he would not venture to promise even his king any other way to learn it than that laid down in the '*Elements.*'[*] And in truth, the strictly scientific procedure, which omits nothing, but refers every thing to a few undeniable truths by a wise arrangement and concatenation of propositions, is the only one which can be of the greatest possible formal and material use; and authors or teachers, who lead their readers or pupils by any other route, do not act fairly either to them or to the science. Nor have the endeavors, which have at various times been made, to change Euclid's system, and sometimes to adopt another arrangement of his propositions, sometimes to substitute other proofs, ever gained any permanent success, but have soon fallen into oblivion. Geometry will not come into the so-called 'school method,' according to which every thing derived from one subject—a triangle, for instance—is to be taken up together. Its only rule of proceeding is to take up first what is to serve for the right understanding of what comes afterward."

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* *Montücla*, I., 24. The list of editions and translations of Euclid's "*Elements*" occupies, *in the fourth part of* Fabricius' "*Bibliotheca Græca*," sixteen quarto pages.

Thus Lorenz considered Euclid's work unimprovable, both as a specimen of pure mathematics and as a class-book. Kartner thought the same. The more the manuals of geometry differ from Euclid, he said, the worse they are. And Montücla, after the paragraph which I have quoted, proceeds to detail the defects of the correctors of Euclid. Some, disregarding strictness of demonstration, have resorted to the method of inspection. Others have adopted the principle that they will not treat of any species of magnitude—of triangles, for instance—until they have fully discussed lines and angles. This last, Montücla calls a sort of childish affectation; and says that, to adhere to the proper geometrical strictness in this method, the number of demonstrations is increased as much as it would be by beginning with any thing of a compound nature, and yet so simple as not to require any succession of steps to arrive at it. And he adds: "I will even go further, and am not afraid to say that this affected arrangement restricts the mind, and accustoms it to a method which is quite inconsistent with any labors as a discoverer. It discovers a few truths with great effort, when it would be no harder to seize with one grasp the stem of which these truths are only the branches."[†]

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[*] "There is no royal road to geometry."

[†] This reads as if Montücla had read many of the modern mathematical works. The abridgment and alteration of the "*Elements*" began as early as in the sixteenth century, and in the second half of the seventeenth the number of altered editions increased. Such were "*Eight books of Euclid's 'Elements.' arranged for the easier understanding, by Dechales,*" (*Euclidi's elementorum libri octo, ad faciliorem captum accommodati auctore Dechales,*) 1660; and "*Euclid's 'Elements,' demonstrated in a new and compendious manner,*" (*Euclidi's elementa nova methodo et compendiarie demonstrata,*) Sens, 1690, &c. Montücla may also have had

The opinions of the admirers of Euclid seem to agree in this: that the "*Elements*" constitute a whole, formed of many propositions, connected with each other in the firmest and most indissoluble connection, and that the order of the propositions can not be disturbed, because each is rendered possible by, and based upon, the preceding, and again serves to render possible and to found the next. As a purely mathematical work, and as a manual of instruction, Euclid's "*Elements*" are so excellent that all attempts to improve it have failed.

On reading these extracts it might be imagined that all the world was quite unanimous on the subject of instruction in geometry, and that all acknowledged as their one undoubted master this author, who has wielded for two thousand years the scepter of the realm of geometry. But far from it. We find strange inconsistencies prevailing on the subject, which are in the most diametrical opposition to these supposed opinions respecting Euclid. For how can we reconcile the discrepancy of finding the same men who see in Euclid such a closely knit, independent, and invariable succession of propositions, omitting, in instruction, whole books of the "*Elements?*" If they make use of the whole of the first book, this only proves that they consider that book as a complete and independent whole. Others go as far as through the sixth book, omitting, however, the second and fifth; and still others take the first, sixth, then the seventh, and then the eleventh and twelfth, entirely omitting the thirteenth. Can a book of the supposed character of this be treated in such a way, losing sometimes five, sometimes nine, and sometimes twelve of its thirteen books?

But how, I ask again, can we reconcile such treatment with such descriptions of Euclid's "*Elements?*" If we closely examine these descriptions, however, we shall see that, notwithstanding the lofty tone of their laudations, they still lack something. All praise the thorough and close connection of the book, but nothing more. It is as if, in representing a handsome man, he should be made only muscular and strong-boned; or, as if the only thing said in praise of Strasburg Minster should be that its stones were hewed most accurately, and most closely laid together. But is there nothing in the work of Euclid to admire except the masterly, artistic skill with which he built together so solidly his masonry, his mathematical proposi-

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reference to the "*New Elements of Geometry,*" (*Nouveaux elémens de géometrie,*) Paris, 1667. This was by Arnauld, of the celebrated school of Port-Royal. Lacroix says of it, "It is, as I believe, the first work in which the geometrical propositions were classed according to abstractions; the properties of lines being treated first, then those of surfaces, and then those of bodies" "*Essays on instruction generally and in mathematics in particular.*" (*Essais sur l'enseignement en général et sur celui des mathématiques en particulier.*) By *Lacroix*, Paris, 1816, p. 289. Unfortunately, I have been unable to examine Arnauld's work. *By Lacroix's* description, it would seem to have been a forerunner of the Pestalozzian school.

tions? Is there not very much beauty in the scientific thought, so proprofound, so comprehensive, and so thoroughly diffused through every part of the work? The great Kepler was even inspired by this beauty, and was exceedingly enraged at Ramus' attack on Euclid, especially against the tenth book of the "*Elements*." Ramus said that he had never read any thing so confused and involved as that book; whereupon Kepler answers him thus: "If you had not thought the book more easily intelligible than it is, you would never have found fault with it for being obscure. It requires great labor, concentration, care, and special mental effort, before Euclid can be understood. * * * You, who in this show yourself the patron of ignorance and vulgarity, may find fault with what you do not understand; but to me, who am an investigator into the causes of things, the road thereto only opened itself in this tenth book." And in another place he says, "By an ignorant decision this tenth book has been condemned not to be read; which, read and understood, may reveal the secrets of philosophy."

Kepler also further attacks Ramus, for not subscribing to the assertion of Proclus—although it is evidently true—that the ultimate design of Euclid's work, toward which all the propositions of all the books tend, was the discussion of the five regular bodies.[*] And Ramus has put forth the singularly rash assertion that those five bodies are not forthcoming at the end of Euclid's "*Elements*." And by thus destroying the purpose of the work, as one might destroy the form of an edifice, there is nothing left except a formless heap of propositions.

"They seem to think," says Kepler, further, "that Euclid's work was called '*Elements*' (στοιχεῖα) because it affords a most various mass of materials for the treatment of all manner of magnitudes, and of such arts as are concerned with magnitudes. But it was rather called '*Elements*' from its form; because each subsequent proposition depends upon the preceding one, even to the last proposition of the last book, which can not dispense with any preceding one. Our modern constructors treat him as if he were a contractor for wood; as if Euclid had written his book to furnish materials to every body else, while he alone should go without any house."

Kepler's estimate differs materially from those first given, in that he does not only praise Euclid's skill in building firm and solid masonry, but the magnificence of his whole structure, from foundation-stone to ridge-pole. But later mathematicians have found fault with Proclus and Kepler for bringing into such prominence the five regular bodies, and finding in them the ultimate object of Euclid's work. Even Montücla and Lorenz do this, although, as we have seen, they agree wholly with Kepler and others in finding that the chain of propositions in Euclid's "*Elements*" is a most perfect one, and that no proposition is stated which is not based upon a previous one. But it would have been impossible for Euclid to construct such a chain, had he not at the beginning of it seen clearly through its whole arrangement; had he not, during the first demonstration of the first book, had in his eye the last problem of the thirteenth. For no architect can lay the first foundation-stone of his building until he has clearly worked out his drawings for the whole.

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[*] Except those which treat of perfect numbers, Proclus says, in his commentary on the first book of Euclid, "Euclid belonged to the Platonic sect, and was familiar with that philosophy, and accordingly the whole of his elementary course looked forward to a consideration of the five 'beautiful bodies' of Plato."

The most superficial observation will show that Euclid begins with the simplest elements, and ends with the mathematical demonstration of solid bodies. He commences with defining the point, line, and surface; treats of plane geometry in the first six books, and comes to solids only in the eleventh. The first definition in this book, that of bodies, follows on after the former three. Lorenz gives us the reason why Euclid inserted between plane and solid geometry, that is, between the sixth and eleventh books, four other books. "The consideration of the regular figures and bodies," he says, "presupposes the doctrines laid down in the tenth book on the commensurability and incommensurability of magnitudes; and this again the arithmetical matter in the seventh, eighth, and ninth books."

The five regular solids, in point of beauty, stand altogether by themselves among all bodies; Plato calls them the "most beautiful bodies." We need not therefore wonder at Euclid for taking, as the crown of his work, the demonstration of their mathematical nature and of their relations to the most perfect of all forms, the sphere. In the eighteenth proposition of the thirteenth book, the last of the whole work, he demonstrates the problem. To find the sides of the five regular bodies, inscribed in a sphere. If this proposition was not the intended object, it is at least certainly the keystone of the structure.

Many things show that the demonstration of the five regular bodies, and of their relations to the cube, was really the final object of the "*Elements*." The Greeks, from their purely mathematical sense of beauty, and remarkable scientific tendencies, admired and studied this select pentade of bodies, which played a great part first in the Pythagorean and afterward in the Platonic school. But that Euclid, who seems to have been instructed by pupils of Plato, followed Pythagoras and Plato in this respect, if we are not convinced of it by the "*Elements*," is clearly enough shown by the quotation given from Proclus, and by the following ancient epigram:—

"The five chief solids of Plato, the Samian wise man invented,
And as Pythagoras found them, so Plato taught us their meaning:
And Euclid based upon them renown wide-spread and enduring."

This epigram from Psellus furnishes an indubitable confirmation of the views of Proclus and Kepler, respecting the arrangement and object of Euclid's great work.

I observed that, in former times, to study Euclid was to study geometry. This will serve as a sufficient apology for the space which I am bestowing upon the "*Elements*."

What was it, is the next inquiry, which caused the later mathematicians to vary so much from Euclid's course, and to omit whole books of his work? We will allow them to answer for themselves.

Of the first six books, and the eleventh and twelfth, Montücla remarks that they contain material which is universally necessary; and are to geometry what the alphabet is to reading and writing. The remaining books, he continues, have been considered less useful, since arithmetic has assumed a different shape, and since the theory of incommensurable magnitudes, and of the regular bodies, have had but few attractions for geometers. They are not however useless for persons with a real genius for mathematics. For these reasons, both Montücla and Lorenz recommend these five omitted books to mathematicians by profession. Of the tenth especially, Montücla says that it includes a theory of incommensurable bodies so profound that he doubts whether any geometer of our day would dare to follow Euclid through the obscure labyrinth. This observation is worth comparing with the expressions of Kepler and Ramus, above mentioned, on the same book.

Of the thirteenth book, which, with the two books of Hypsicles to follow it, treats of the regular solids, Montücla says, "Notwithstanding the small value of this book, an editor of Euclid, Foix,* Count de Candalle, added three more to it, in which he seems to have endeavored to discover every thing that could possibly be thought of respecting the reciprocal relations of the five regular solids. Otherwise, this theory of the regular solids may be compared with old mines, which are abandoned because they cost more than they produce. Geometers will find them at most worth considering as amusement for leisure, or as suggestive of some singular prolem."

What would Kepler have said to this opinion?

As soon as we consider Euclid's work otherwise than as a single whole, we see at once a necessity for modeling the eight "universally necessary" books into a new manual, of reorganizing it, and accommodating it to a new object. Distinguished mathematicians have undertaken such a remodeling, mostly including as many as possible of Euclid's propositions, and even of his groups of them, in their manuals. But how, it will be asked, can a work, so compactly organized as Euclid's, be capable of being taken to pieces, and its *disjecta membra* be arranged into a new manual? The explanation is as follows:—Although Euclid set out from one fixed point to reach another, yet he did not proceed in one straight line from one to the other, without any divergence. His single propositions, and still more the groups of them, have a species of independent existence, such that they can be recomposed into new manuals, whose arrangement is wholly different from that of Euclid.

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* François Foix, Count de Candalle, who died in 1594, in his ninety-second year. He founded a mathematical professorship at Bourdeaux, to be held by persons who should discover a new property of the five regular solids. The first edition of Candalle's Euclid, with a 16th book, appeared in 1566; the second, with 17th and 18th books, in 1578. It is Latin, "Autore *Franc. Flussate Candalla.*"

> "It is with the fabric of the thoughts
> As it is with a weaver's master-piece;
> Where one thread governs a thousand threads,
> And the shuttle flies backward and forward,
> And the threads fly unseen hither and thither,
> And one stroke affects a thousand combinations."

These expressions of Goethe's Mephistopheles are entirely applicable to Euclid's master-piece.

Shall we now reject these good modern manuals, and use in our mathematical studies the thirteen original books of the "*Elements?*" Even Kepler, the most thorough-going admirer of Euclid, would object to this. He defended and praised the "*Elements*" as a magnificent scientific work, but not as a school-book. He would never have recommended our gymnasiasts to study the tenth book, although he charged the celebrated Ramus with having fallen into a grievous error in thinking the book too easy, since it required intellectual exertion to understand it. Montücla, although he expressed himself strongly against a false, enervating, and unscientific mode of teaching mathematics, yet says that geometry must be made intelligible, and that many manuals have subserved this end, which he has gladly made use of in instructing; and that he would recommend the exclusive use of Euclid only to those of remarkable mathematical endowments.

But were Euclid's "*Elements*" originally a manual for beginners? Shall we compare the learned mathematicians who came from all countries to Alexandria to finish their studies under Euclid, Eratosthenes, or Hipparchus, with gymnasiasts sixteen years old? The Museum at Alexandria was at first, that is in Euclid's time, a mere association *learned men*; and only afterward became an educational institution.* Euclid therefore wrote his "*Elements*" for men who came to him already well experienced in mathematical knowledge and exercises. It was because the book was not a school-book that Euclid gave his answer to the king who required him to make geometry easier.

But what was the origin of the book?

The reader may perhaps apprehend that this question will lead me into historical obscurity, and obscure hypotheses. But there is no danger.

Montücla says that Euclid, in his book, collected such elementary truths of geometry as had been discovered before him. We know, of at least some of his problems, that they were known before Euclid; such, for instance, as the Pythagorean problems. But, nevertheless, Euclid remains entitled to the credit of having performed a service of incalculable value in the form of the most able and thoroughly artistic editing.

We have already stated the idea which guided him in this task of editing; it was to proceed from the simplest elements, by means of points, lines, and surfaces, to mathematical bodies, and finally to the most beautiful of them, the five regular bodies, and their relations to the cube.

But would geometrical studies, commenced at the very beginning on Euclid's principles, have led immediately to an elementary system such as his? Certainly not. If they would, what occasion would there be for so much admiration of them, and of calling them Elements *par excellence*, and their author "*the Elementarist?*"

No man would ever have begun with a point, a non-existent thing, (*ens non ens*,) and from that proceeded to lines, surfaces, and lastly to solids. Solids would rather be the first objects considered; objects of the natural vision, and the pupil would have proceeded by abstracting from this total idea to the separate consideration of surfaces, which bound solids; lines, which bound surfaces; and lastly of points, which bound lines.

After having proceeded to this ultimate abstraction, to the very elements themselves of the study, Euclid worked out his elementary system as a retrograde course; a reconstruction of solids from their elements. And this reconstruction could only be effected by the aid of precise knowledge and intelligent technical skill; of a full understanding of the laws and relations of figures, solids, &c.

Acute Greek intellects, investigating solids and figures, and subjecting them to actual vision, would of course discover many of their laws at once, and readily. Others, however, could not be perceived by intuition, but could be disclosed to the understanding only at a later period.[*] In examining this cube, for instance, it would appear at once that its sides were equilateral and equiangular; and that one of its horizontal sides was bounded by four vertical ones. But that its edge, diagonal of a side, and axis are to each other as $\sqrt{1} : \sqrt{2} : \sqrt{3}$ could not be perceived with the bodily eye, but appears by the help of the Pythagorean problem.

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* See Klippel, on the Alexandrian Museum, 114, 238.

The demonstrations, as is sufficiently evident, must have begun with such as were concrete, simple, and visible, and proceeded to such as were more comprehensive, abstract, and beyond the scope of the senses. For instance, the application of the Pythagorean problem to all right-angled triangles would scarcely have been undertaken at the beginning. But in the case of isosceles right-angled triangles, inspection would show, by a very simple demonstration, that the squares of the sides were together equal to the square of the hypothenuse.[†] If this were proved, the question was then easily suggested, Is it true of all right-angled triangles? If a square were divided by a diagonal into two triangles, it was evident that each of them contained one right angle and two half right angles, the sum of the three being two right angles; and then the question would naturally occur, Is this true of all triangles?

In the same manner it would be necessary to proceed from the simplest and most regular solids and figures to the more complicated and less regular; from those most easily seen by the eye to the more abstract, requiring the use, not of the senses, but of the reason. When at last the most comprehensive demonstration and definition had been learned, there would be no further mention of the previous concrete cases, which had been an introduction to the study of the more abstract ones, but the cases to consider would now be those involved in the definition and demonstration last found.

It has repeatedly been observed that the teacher of a science must adhere to its proper course of development, and must in his instructions follow it more or less strictly. Every pupil ought once to follow this path, which its first discoverers and investigators worked out after

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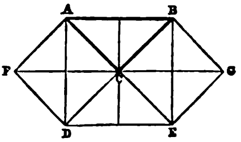
[*] See my "*A B C-Book of Crystallography,*" (*A B C-Buch der Krystallkunde,*) pp. IX., XI., XXIII., and 164; and Harnisch, "*Manual of the German Common School System,*" (*Handbuch über das deutsche Volkschulwesens,*) 1st ed., 1820, p. 232.

[†] The demonstration may be somewhat as follows:—



A B C, isosceles right-angled triangle. A B D E, the square of its hypothenuse, contains *eight small triangles*, and the squares on its sides together contain also eight, and all of these *small triangles are of* the same size and shape.

so many and long-enduring errors, but which the present pupils, with their teacher's aid, now find out in a shorter time, and with certainty.

According to these principles, to which I subscribe, I consider it natural to begin teaching geometry with treating of solids, with which it is highly probable that the actual development of the science began; and to proceed from that point, by abstraction, to the elements. It is here that Euclid's method should be adopted, and that we should proceed by demonstrations, from the elements up to solids. In the former course, it is instruction that leads, and reason silently follows; in the latter, the reason speaks, and the intuition must place faith in it.

Many mathematicians are now agreed that Euclid's demonstrative course of instruction should be preceded by an introduction of an intuitional character. In the theory of forms brought forward by Pestalozzi and his school, in particular, was discovered a preparatory course in geometry, in which intuition was the chief actor, as is the reason in geometry proper.[*]

Still, however, the beginning was not made with solids, but, in accordance with a method of elementarizing which was pushed even to caricature, with points—unmeasurable, dimensionless points. Lines come next, and were taught in innumerable and aimless combinations. Lastly, surfaces were discussed; for of solids Schmid's well-known Theory of Form, the predecessor of many more, scarcely spoke at all, and what little was said was not worth mentioning.[†]

The necessity was afterward felt of beginning with a solid—the cube, for instance; but merely with the design of showing from it the process of abstraction by which to proceed from the solid to the point. As soon as this had been briefly done, they then commonly proceeded to the combination of points, lines, &c., and to other operations, as were just alluded to. How important soever this theory of form may seem to me, and however much I may honor the intelligence, industry, and effort with which this new course of discipline was worked out by able pedagogues, still I can not possibly recognize the method which they followed as the right one.[‡]

What I would recommend is, that instruction in geometry should begin, not with such a brief analysis of one or another solid into its geometrical elements, but with a continued study, at some length, of many mathematical solids. And now, if solids are to be both the beginning and the end of the elementary study of geometry, the question naturally comes up, What bodies? Shall they be those of which every stereometry treats—the prism, pyramid, sphere, cone, and cylinder? Shall it be the five regular solids?

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[*] Part 2, p. 101.

[†] Diesterweg "*Guide*," (*Wegweiser*) Second edition, part 2, p. 188, &c.

[‡] I entirely agree with the acute and able judgment passed by Curtmann on the study of Form in common schools, and on Froebel's "eccentric proposal to use geometrical combinations as a principal amusement for children." See Curtmann's "School and Life," (*Die Schule und das Leben.*) p. 62.

The opinion of Montücla, already given on this point, might perhaps alarm us, even if inclined toward an affirmative. He compares the theory of the five regular bodies to ancient mines, which are neglected because they cost more than they produce. "Geometers," he continues, "will use them at most for a leisure amusement, or as suggestive of some singular problem." But such old mining works are opened again, and afford great profits; and the merest leisure sometimes is the occasion of solemn earnestness. Of many of the solids which the ancient mathematicians constructed, with scientific geometrical skill,* the originals have been found in nature in our own times; and, besides these, an innumerable multitude of other beautiful forms, in which are revealed laws of which no mathematician ever dreamed.

It is mineralogy which has opened to us this new geometrical world—the world of crystallography. With this I first became acquainted, as I have already mentioned, in Werner's school, at Freiberg. When I afterward came to Yverdun, in 1809, and made myself acquainted with Schmid's Theory of Forms, this latter appeared to me the most uncouth of all possible opposites of crystallography.

This theory of forms consisted of endless and illimitable combinations. The object seemed to be to find at how many points a line could be intersected; but no reference was made to the question whether the figures resulting from such combinations were beautiful or ugly. But, in the absence of a sense of mathematical beauty, great caution must be used in approving a course of mathematical instruction which consists principally of mathematical intuitions. Nothing of any value, as I have mentioned, was said of solids. Every thing seemed designed to keep the boys in incessant, intense, and even overstrained productive activity, without any care whether the product was of any geometrical value. A formal result, it might be said, was the chief thing sought.

But how diametrically opposite was the study of crystallography at Freiberg to this unnatural and endless production of mathematical misconceptions! It began with a silent ocular investigation of the wonderfully beautiful crystals themselves; works of Him who is the "Master of all beauty." A presentiment of unfathomable, divine geometry came upon us; and how great was our pleasure as we gradually became acquainted with the laws of the various individual forms, and their relations. Nobody thought of any special formal usefulness in his study of crystals; it would have seemed almost a blasphemy to us had any one told us to use the crystals for our education. We quite forgot ourselves in the profundity and unfathomable wealth of our subject; and this beneficial carelessness seemed to us a much greater formal benefit than could have been obtained by any restless running and hunting after such a benefit.

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* Including several of the thirteen Archimedean solids.

The opposite impressions thus received at Freiberg and Yverdun are indelibly impressed upon my mind. And I readily admit that all my inclinations drew me toward a quiet investigation of God's works; an inward life from which my actual knowledge should gradually grow. In proportion as I have experienced the blessing of this peaceful mode of activity, I find an incessant, restless, overstrained activity more repulsive to me, and I am frightened at the pedagogical imperative mood, "Never stand still!" It is to me as if all beautiful Sundays and their sacred rest were entirely abrogated, and as if I were forced to hasten forward, restlessly and forever, without once delaying for peaceful contemplation, though the road should lead through the summer of paradise.

But to return to my subject.

When, twenty-four years ago, I wrote my "*Attempt at an A B C-Book of Crystallography*," (*Versuch eines A B C-Buch der Krystallkunde*,) I remembered, while employed on that common ground of mathematics and mineralogy, Schmid's Theory of Forms, and expressed the hope that a scientific crystallography, proceeding according to the laws of nature, might accomplish, in a regular manner and with a clear purpose, what the theory of forms of Pestalozzi's disciples had endeavored to do without regularity or definite purpose.

I was convinced that such a connection with the subject of crystals must give to the treatment of the theory of forms a character entirely new, and entirely opposite to that previously usual. Wherever beginners were required to practice this incessant combination and production, they would now be employed in becoming familiar with natural crystals and models of them. They should not be confined exclusively to models, lest they should fall into the error of supposing themselves to have to do only with human productions; and of imagining that there are no other mathematics except those of man. Natural crystals lead the pupil to a much profounder source of mathematical knowledge; to the same source from which Plato, Euclid, and Kepler drank.*

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* Mohl's valuable work on the forms of grains of pollen shows that among them are several mathematical ones; as octahedrons, tetrahedrons, cubes, and pentagonal dodecahedrons. (Mohl's Contributions, Plate I., 3; Pl. II., 30, 34, 35; Pl. VI., 17, 18: &c.) Schkuhr had already described dodecahedrons and icosahedrons. Thus mathematical forms are found also in the mathematical world.

I will here give some details to show that proper instruction in crystallography will serve the same purpose which was sought by the theory of forms. Every solid, I would first say,* fills a certain space, and the questions to ask respecting it are,

1. What is the form of the solid (or of the space which it fills?)

2. What is its magnitude, (or the magnitude of the space which it fills?)

Similar questions arise respecting limited superficies. If now we compare two solids, or two surfaces, they may be either,

a. Alike in form and magnitude, or congruent; as, for instance, two squares or cubes of equal size. The squares will cover each other, the cubes would fill the same mold.

b. Alike in form but unlike in magnitude, or similar; as two squares or cubes of different sizes. Of two similar but unequal solids, the smaller, A, may be compared with the larger, B, in a decreasing proportion. If any line of A equals, for instance, one-half of the corresponding line of B, all the other lines of A are to the corresponding ones of B in the same proportion.

c. Unlike in form but alike in magnitude, or equal; as a square and a rhomboid of equal base and hight; a square prism and a crystal of garnet, where the side of an end of the prism equals the short diagonal of one of the rhombic surfaces of the crystal, and a side edge of the prism is twice as long as the same diagonal.

d. Unlike in form and magnitude.

The theory of form, as its name indicates, is chiefly concerned with the forms of bodies and surfaces; and so is crystallography. The latter deals only incidentally with the materials of bodies, and treats chiefly of the shape of single crystals, and the comparison of different ones, with the design of discovering whether they vary from each other or not.

I was occupied many years with elementary instruction in crystallography; and from these labors resulted the "*Attempt at an A B C-Book of Crystallography*," which I have already mentioned.

In the course of this instruction I found by experience how much not only older persons but even boys of ten or twelve are attracted by these beautiful mathematical bodies, and how firmly their forms were impressed on their minds; so firmly that the more skillful of them could go accurately through the successive modifications of related forms, without using any models.

Any one who has studied elementary crystallography, as an introduction to geometry, will find this course a great assistance to the understanding of the ancient Greek geometers. He will not ask, as the modern mathematicians do, what is the use of investigating the regular solids? And he will find himself much better able to study in the method of the ancients; a method the neglect of which has been lamented by Fermat, Newton, and Montücla. A later writer has described this method as one which speaks to the eyes and the understanding, by figures and copious demonstrations. And he laments that the more recent mathematicians have allowed themselves to be carried to a harmful extreme by the extraordinary facility of the algebraic analysis. "In fact," he says, "the ancient method had certain advantages, which must be conceded to it by any person only even moderately acquainted with it. It was always lucid, and enlightened while it convinced; instead of which, the algebraic analysis constrains the understanding to assent, without informing it. In the ancient method, every step is seen; and not a single link of the connection between the principle and its furthest consequence escapes the mind. In the algebraic analysis, on the other hand, all the intermediate members of the process are in a manner left out; and we merely feel convinced in consequence of the adherence to rule which we know is observed in the mechanism of the operations in which great part of the solution consists."[*]

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* See my "*A B C-Book of Crystallography*," p. 162.

Speaking pedagogically, no one can doubt, after the descriptions thus given, whether the geometrical method of the ancients has the advantage, in regard to form, over the analytical one of the moderns. I have shown elsewhere how harmful it is to give the boys formulas, by whose aid they can easily reckon out what they ought to discover by actual intuition; as in the case where a pupil, who scarcely knows how many surfaces, edges, and angles a cube has, computes instantly by a formula, by a mere subtraction, what is the number of angles of a body having 182 sides and 540 edges, without having the least actual knowledge of such a body.

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[*] An instance of the predominance of the analytic method is found in the "*Mécanique Céleste*" of Lagrange, which appeared in 1788. In this, the author says, "The reader will find no drawings in this work. In the method which I have here employed, neither constructions nor any other geometrical nor mechanical appliances are needed; nothing but purely algebraical operations."

IX. ARITHMETIC.

[Translated from Raumer's "*History of Pedagogy*," for the American Journal of Education.]

THE difference between ancient and modern methods of instruction is remarkably clear in the case of arithmetic.

By way of describing the ancient method, I will cite portions of one of the oldest and best reputed of German school-books—the "*Elementa Arithmetices*" of George Peurbach.[*] This author was, in his time, the greatest mathematician in Germany; and one of his pupils was the great Regiomontanus.[†]

Peurbach's arithmetic began with the consideration of numbers. "These," he says, "are divided by mathematicians into three kinds: into digits, which are smaller than ten; articles, (articuli,) which can be divided by ten without a remainder; and composite numbers, consisting of a digit and an integer. Unity is however no number, but the rudiment of all numbers; it is to number what a point is to a line. In arithmetic it is usual, after the manner of the Arabs, who first invented it, to work from right to left. Every figure, when standing in the first place at the right hand, has its own primitive value; that in the second place has two times its primitive value, in the third place a hundred times, in the fourth one thousand times, and so on."

The second chapter is on addition. "To unite several numbers in one, write them so that all the figures of the first place (units) shall stand under each other, and in like manner of the second place, and so on. Having arranged them in this way, draw a line under them, and then begin the work at the right hand by adding together all the numbers of the right column. The sum resulting from this addition will be either a unit, or an article, or a composite number. If a unit, write it under the line, immediately under the units; if an article, write a cipher[*] there, and add the number of tens to the second column; if a composite number, write the units under the units, and add the tens to the second column. Proceed in the same manner with the second column, but do not forget to add in the tens resulting from the addition of the first column. When you have finished the second column, proceed to the third, fourth, &c. When you add up the last column, you can, if the addition gives tens, set them down at once."

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[*] "*Elements of Arithmetic. An algorithm of whole numbers, fractions, common rules, and proportions. By George Peurbach. All recently edited with remarkable faithfulness and diligence.* 1536. *With preface by Philip Melancthon.*" (*Elementa Arithmetices. Algorithmus de numeris integris, fractis, regulis communibus, et de proportionibus. Autore Georgio Peurbachio. Omnia recens in lucem edita fide et diligentia singulari. An.* 1536. *Cum præfacione Phil. Melanth.*) Peurbach was born in 1423, and died 1461.

[†] "This philosophy of celestial things was almost born again in Vienna under the auspices of Peurbach. This whole department of learning, (astronomy,) after having lain in dishonor for centuries, has of late flourished anew in Germany, under the restoring hands of two men, Peurbach and Regiomontanus. Their very achievements testify that these two heroes were raised up, for the promotion of that branch of learning, by some wonderful power of divine appointment." This is Melancthon's opinion, as given in his preface to the "*Sphæra*" of Sacro Bosco. Comp. Montücla, "*History of Mathematics*," part 3, book 2; also Schubert's "*Peurbach*," &c.

The instruction in the other ground rules is given quite in the same way; as is the mode of proving examples. For multiplication he especially recommends the multiplication table. "If you have not thoroughly mastered this," he says, "I assure you that, if you do not take pains to learn it, you will make no progress in arithmetic."

This may suffice to describe the style of Peurbach's arithmetic, four hundred years old; the same method has prevailed even down to our own times. It is in this study, as I have said, that the difference comes out most clearly between the ancient and modern styles of instruction. To show this in a single point, let the reader compare Peurbach's recommendation about the multiplication table with an expression of Diesterweg's. The latter says, "The ancient teachers made the famous multiplication table the basis of all arithmetic. They made it the beginning of the study, printed it in the primer, and impressed it mechanically upon the children's memories. Nowadays it plays a more subordinate part; and this single fact may show how far we have left the worthy ancients behind us in arithmetical instruction. * * * The multiplication table, with us, comes after the addition and subtraction tables, and before the division table; that is all."[†]

The following observations will state the difference between the ancient and modern methods of instruction in arithmetic.

The object of the ancient method was to enable the children to add, subtract, &c.; an art of arithmetic was sought, not an understanding of it, a theory of it. As a foreman shows his apprentice how to do his work by categorical imperatives, First do this and then do that, without any whys or wherefores, just so was arithmetic taught, without any effort on the part of the teacher to communicate to the scholar an understanding of the things he did. Nothing was thought of except skill in operating, which was gained by much practice. This mode of instruction was made more natural by the fact that only written arithmetic was taught.

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[*] *Cifram* or *Zyphram*; others say *figura nihili*, or circulus; as Hudalrichus Regius, in his "*Epitome Arithmeticæ*," (1536.) p. 41. Maximus Planudes (in the 14th century) has τζιφρα for naught. Fibonacci, a Pisan, wrote in 1202 a "*Treatise on the Abacus*," (*Tractatus de Abaco.*) in which he relates that during his travels he learned the Indian art of arithmetic, by which with ten figures all numbers can be written. (*Cum his* * * * *figuris, et cum signo O. quod Arabice Zephirum appellatur.*) (Whewell, 1. 190.) Lichtenberg (6, 272) says, "Zero (naught) is derived from *cyphra* and *cypher*, the Latin and English for naught; and these from the Hebrew *sephar*, to count." Menage says, "*Chifre.*—The Spaniards first took this word from the Arabs. It was Zefro." Spaniards change f into h; hence, Zefro, Zehro, Zero. When did the German Ziffer receive its present meaning?

[†] In the preface to his "*Handbuch*," Diesterweg says, however, 'Any one desirous of multiplying larger numbers together in his head must know the multiplication table by heart. The inferior grade of computation must be facilitated by this great means of assistance, in order to avoid difficulties in the higher grade.' This agrees with Peurbach.

Pestalozzi and his school opposed this method of instruction, and called it mechanical, and unworthy of a thinking being. The child, they said, must know what he is doing; and should not merely perform operations without any understanding of them, according to the teacher's directions. Understanding is the chief object; the training of the intellect as a properly human discipline, without any relation to future practical life. A few of them claimed that, if the scholar acquired nothing but this intelligent knowledge, if it was done in the proper methodical way, his practical skill would come of itself; that, by the knowing about his art in the proper manner, a man becomes a master of it.*

The ancient method, which kept the pupils at unwearied drilling, trained skillful and certain mechanical laborers. The pupils operated according to traditional rules, which they did not understand, and which even the teachers themselves very likely did not understand, any more than the master-mason, when showing an apprentice how to make a right angle with a string divided by two knots into lengths of three, four, and five feet, can also explain to him the Pythagorean problem.

But although by this method the scholar was excellently well prepared for many computations, which he will have occasion for in practical life, yet he will be quite at a loss how to help himself whenever a case shall come up to which he can not apply his rule exactly as he learned to use it. This will appear when he enters upon Algebra; even in undertaking to use letters instead of figures in his much-practiced Rule of Three. Algebra requires every where a clear, abstract knowledge of arithmetical operations and relations—a just distinguishing between the known and unknown quantities which are to be sought or eliminated, and an understanding of the mode of using these in the most varying cases. But all this will be entirely wanting to the mere routinist, whose thinking is done by traditional rules founded on experience. He would in like manner find himself unprovided with an intelligent method of mental arithmetic, such as requires independent work by the scholar; for what this school called mental arithmetic was nothing but an inward display of figures, and an inward operation performed upon them.

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* *An error which they subsequently perceived; and afterward labored at a union of knowledge and practical skill.*

Three chief adversaries appeared against the ancient mechanical arithmetic, of whom I have just mentioned two.

The first, namely, was Algebra.* This represented special cases in a universal way; and treated special procedures in arithmetic in such a manner that the course of the proceeding—the law according to which the required quantities were found—was clearly expressed. Letters were every where used for numbers—undetermined numbers; for any letter might stand for all possible numbers.†

Thus, in algebra, the understanding and investigating of universal relations and laws appeared as opposed to mere computations, practiced according to a rule not understood, and aiming only at mechanical facility.

In like manner arose the true method of mental arithmetic, which has become so prominent, especially in later and the latest times, in the place of the usual operating upon pictures of figures within the mind. It was seen that upon this intelligent mental arithmetic must be based a right understanding of the mechanical processes of arithmetic. This was, among other reasons, because the mental method obliged the pupil to perform many operations in an order quite different, and even entirely opposed, to that used in written arithmetic.

The third adversary of the old method of arithmetic was the intuition so prominently urged by Pestalozzi and his school. While algebra took the arithmetical laws out of concrete numbers, and established them as ideas, abstractly, Pestalozzi, on the contrary, sought for means of that intuitional instruction which must precede all reckoning with numbers, and without which that reckoning must be without any proper foundation. As algebra developed itself out of concrete arithmetic, so was the idea of number itself, again, to be deduced from the bodily examination of numerable objects of various kinds. "The mother," says Pestalozzi, "should put before the child, on the table, peas, pebbles, chips, &c., to count; and should say, on showing him the pea, &c., not 'This is *one*,' but 'This is one *pea*,' &c." And he proceeds to say, "While the mother is thus teaching the child to recognize and name different objects, as peas, pebbles, &c., as being one, two, three, &c., it follows, by the method in which she shows and names them to the child, that the words one, two, three, &c., remain always the same; while the words pea, pebble,

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* I use this word, like Euler, Montücla, Kries. &c., in its wider sense.

† Kries' "*Manual of Pure Mathematics*," (Lehrbuch der Reinen Mathematik,") p. 72, &c.

&c., always change, as the nature of the object changes which is thus used; and by this permanence of the one, and constant change of the other, there will be established in the child's mind the abstract idea of number; that is, a definite consciousness of the relations of more or fewer, independently of the objects which are set before him as being more or fewer."*

Thus far Pestalozzi adheres to the method in which arithmetic had always been begun, in a manner strictly accordant with nature. Counting had been taught by beans, &c., and especially on the fingers. "You can count that on your fingers" is an old proverb.

He now, however, proceeds further, to artificial school-apparatus for intuition. He and his fellow-teacher, Krüsi, prepared some "intuitional tables" for this purpose. In the first, the numbers from one to ten are separated by marks: a I in the upper horizontal row, II below it, and so on, down to ten such marks for ten. And 175 pages were occupied with exercises to be taught upon these marks.

The second intuitional table is in the form of a square, divided into ten times ten small squares. The ten squares in the upper horizontal row are not divided; those in the second are halved by a perpendicular line; those of the third are divided into thirds by two such lines; and so on, to the last, which is divided into ten parts by nine perpendicular lines.

The second intuitional table is properly followed by the third in the second part of the "*Intuitional Theory.*" It is a large square, divided into ten rows of ten small squares. The first of the first horizontal row is undivided, the second halved by a horizontal line, the third divided into three parts by two horizontal lines, and so on to the tenth. The ten squares of the first perpendicular row are divided in the same way by perpendicular lines, and the other squares are divided both by perpendicular and horizontal lines, (corresponding with a multiplication table,) according to their order, in a perpendicular and a horizontal row. Thus the hundredth small square, diagonally opposite that which is not divided at all, is thus divided into ten times the smaller squares, of which each is a thousandth of the large one.

The second table, preceding this, consists of thirty-six pairs of parallel lines, equal in length but divided differently. The pair A and B, for instance, are divided by points into six equal parts; but, besides this, A is divided into halves and B into thirds; the former into twice three-sixths, and the latter into three times two sixths.

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* Pestalozzi, preface to part 2 of his "*Intuitional Theory of the Relations of Numbers,*" (*Anschauungslehre der Zahlenverhaltnisse.*)

For the method of using these intuitional tables in instruction, I refer to Pestalozzi's "*Elementary Books*," and to Von Türk's "*Letters from Munchen-Buchsee.*"[*] I shall here only offer a few observations on them.

By means of these tables it was sought to elucidate to the children the four ground rules, fractions, and the rule of three, even algebraically. In particular, every number was considered as composed of ones, and was referred to ones as its elementary parts. And this was done not only at first to facilitate a clear understanding, but in subsequent parts of arithmetic, and even to a wearisome extent. Instead of seven, "seven times one" was used; and again, "One is the seventh part of seven." And thus were composed so many strange, wordy problems; as "Three times half of two, and six times the seventh part of seven, are how many times the fourth part of four?"[†]

Pestalozzi should undoubtedly have the credit of calling attention, by his "*Elementary Books*," to the visual element of arithmetic, which had previously been almost entirely neglected in the schools. Since that time, this element has been much used for primary instruction, and as a means of laying a foundation by the use of the senses for subsequent insight. But at present, most of the arithmetics of the Pestalozzian school vary much from this excessive use of the senses, as is shown by their books of examples.

It is clear that there are limits to the use of the intuitional faculties. Pestalozzi exceeded these in various ways; as in the line divided into ninety parts, and a square divided into ninety rectangles, which we find in his "*Elementary Books.*" What eye would distinguish, in his third table, between the square divided into nine times ten rectangles, and that divided into ten times ten, next after it?

The necessity of actual intuition at the beginning of arithmetic also led Pestalozzi into an error. "When," he says,[‡] "we learn merely by rote that three and four are seven, and then proceed upon this seven just as if we actually knew that three and four were equal to seven, we deceive ourselves, and the inner truth of this seven is not in us; for we have not that foundation in the evidence of our senses which only can make the empty word a truth to us."

But granting that I can inwardly see the picture of the statement that $3+4=7$ in marks, peas, &c., can I have the same sort of visible basis within me when I would add $59+76=135$; or, rather, $3567+4739=8306$? Are all such operations as these last then destitute of intuition? that is, are they all actually empty words and unintelligent labor?

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[*] Pt. 1, p. 16, &c, p. 51, &c. [†] Ib., p. 53. [‡] "How Gertrude Teaches her Children."

These considerations may enable us to arrive at a correct estimate and application of the use of intuition. It is intended to assist the work of the understanding, by representations which the eye will easily take in and the mind will easily retain; and to facilitate the comprehension of numbers and their relations to each other, and afterward the methods of operating in agreement with the ideas thus received. If the intuitional powers have fulfilled their task, and if a correct understanding has been attained in the small matters at first studied, the pupil may boldly proceed to greater numbers—to numbers so great that intuition can not deal with them at all. Thus, the scholar's intuition on the subject of fractions may carry him, for instance, at furthest, to the subdivision of a line into twenty-four equal parts, and to their designation in their various different ways, as 2×12; 3×8; 4×6; 6×4; 8×3; and 12×2. By means of such a line as this a clear idea can be formed of the mutual relations of fractions of different denominators; as, for instance, that $\frac{6}{12} = \frac{12}{24} = \frac{2}{4} = \frac{4}{8} = \frac{3}{6}$ or that $\frac{21}{24} = \frac{7}{8}$, &c. But the eye is not capable of taking in Pestalozzi's line subdivided into ten times ten portions. In this case the understanding has to assist the eye much more than the eye the understanding.

We have seen that instruction in arithmetic has always commenced with visual intuition, and that Pestalozzi endeavored to erect this natural proceeding into a method—a system which should proceed from a right beginning to a right end, in a right manner. With this design he published his "*Elementary Books*" and Intuitional Tables. And yet, the numerous and even excessive exercises upon these tables had really nothing whatever to do with arithmetic. After the pupil had completed the whole of these exercises, without even knowing the Arabic figures, these last may be made known to him "in the usual manner,"* and their value as dependent on their places. After this comes operations with figures.

But my experience has been, that it is precisely for the understanding of these operations that intuition is most necessary. The tiresome, inanimate marks of the Pestalozzian tables seem to me peculiarly unsuitable for children, who rather require colored or shining things, such as will easily impress their fancy. And again, if these things are to open the road to operations with figures, they must represent not mere units, but must be adapted to the decimal system—the system of Arabic figures. I made use of counters; which, if properly managed, will afford much assistance.†

A difference must be made between numbers and figures. The same number can be indicated by very different figures; as, for instance,

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* Türk, 101. † See Appendix III. on this point.

One.	Five.	Ten.	Hundred.	Thousand.
ά	έ	ί	ρ́	α
I	V	X	C	M
1	5	10	100	1000

To comprehend the wondrous and almost magic power of the so-called Arabic figures, it is only necessary to work the same example with these and with the Greek or Roman figures.* The example in the note is very simple; the difference will appear more evidently on trying even a very moderately large example in "long division" with the Roman figures. And if there is such a difference even in the elementary part of arithmetic, how much greater will it be in more complicated work!

In later times this written arithmetic, so far from being an object of admiration, has, on the contrary, been so violently attacked that mental arithmetic has assumed a remarkable predominance over it. A teacher wrote a little work, entitled "*Head or Thought-Arithmetic;*" in which written arithmetic was almost synonymous with "mindless arithmetic." This reaction, however, was quite natural. We have already seen that in early times pupils were taught only the operations with figures; that they only learned to juggle according to the rules given them, and did not even know how they arrived at the results of their operations. Schiller objects to certain authors that "language did their thinking and wrote their poetry for them." In like manner the wonderful decimal system thought for these scholars, if not even for their teachers themselves.

It is at present a source of satisfaction, that by mental arithmetic this juggling business is to be brought to an end. And for certainty's sake it is strictly forbidden to perform the mental operations with the help of imaginary figures, this being really identical with written arithmetic.

But a proper regard should be paid to the latter; and it should be remembered how soon we come to the limits of mental arithmetical operations where we become obliged to use figures, letters, or visible representatives of some kind. Many persons are inclined to exceed these limits, even by force; and imagine that by the most complicated examples in mental arithmetic they can develop the scholar's capacity to the utmost extent. But a skillful mathematician of

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* (A) (B)
432)864(2 CCCCXXXII)DCCCXXXXXXIV(II

This is but a trivial example of the magic of the decimal system; 100,000 florins are how many each to ten men? *Ans.*—10,000 florins. The fault is our own if we do not admire such a system.

Berlin has asserted, in contradiction to these, that "mental arithmetic is not actually an exercise of the understanding, because it requires the use of the memory exclusively." No one can deny this statement as to the use of the memory; nor that those virtuosos, who are accustomed to exhibit their skill in mental arithmetic, are usually of very trifling capacity in other matters.

The correct belief is that of those who, like Diesterweg and Stern, have opposed not merely the earlier mechanical written arithmetic, but have also sought to penetrate the essential principles of the mechanism of it, and to make their pupils understand, so that the latter might make use of written arithmetic with the same clear comprehension as mental arithmetic.

It was seen that the difference between mental and written arithmetic consisted chiefly in the abbreviations which are used in the latter. But the pupil readily apprehends the briefer processes of the latter, when explained to him in full by the teacher.* For arithmetical instruction is concerned with the explanation of abbreviations, from the elements up to the infinitesimal calculus; with marks and formulas invented by the most penetrating mathematical minds. To the pupil these appear to be mere magic marks and formulas, until he is made acquainted with the mode of their production. In the higher grades of the study, however, the pupil may be accustomed to the purely mechanical use of many algebraical formulas and of logarithms, in the same way in which the mechanical use of arithmetical figures used to be taught.

The question how far arithmetical instruction should be carried in one and another school, is in some cases easy, and in others difficult, to answer.

For elementary schools, Diesterweg was right in saying, "Every child should here go so far in arithmetic as to be able to solve readily in writing or mentally such problems as he will meet in common life." In the common schools there should be no prominent efforts after isolated distinction in any department.

It is much more difficult to fix a limit for arithmetical instruction in the burgher schools, because these schools are of very various characters, according to circumstances. The general future occupation of the children who attend the burgher schools has particularly great influence in this respect.

By examining a large number of school programmes, from various parts of Germany, I have found that at present most of the gymnasia proceed to about the same extent in mathematical instruction.

The Prussian ordinance on examinations, of 1834, requires "Thoroughness in the theory of the powers and roots in progressions, and also in the elements of algebra and geometry,[*] plane and solid; knowledge of the theory of combinations and the binomial theorem; facility in managing equations of the first and second degree, and in the use of logarithms; a practiced knowledge of plane trigonometry; and especially a clear comprehension of the connection of all the propositions in the whole system of lessons."

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* For an example see Appendix IV.

A hundred years before, in a Prussian ordinance of 1735, no methodical knowledge was required, even of gymnasium graduates.[†]

On the question whether the gymnasium course should also include conic sections and spherical trigonomety, opinions differ. Only the teachers of two gymnasia declare for instruction in the infinitesimal calculus, while others are decidedly opposed to it, and certainly with entire propriety. Pupils of distinguished mathematical talents should follow their mathematical course further, at the university or at the polytechnic school.[‡]

There is no study where so urgent a warning is needed against the overstimulus of the scholars as in mathematics. It is known that, in Pestalozzi's institution, Schmid's influence caused this department to occupy a disproportionate space, and pushed every thing else into the background. The children were also experimented on; and were encouraged to exercise exhibitions of arithmetical skill, in the same manner as injudicious gymnastic instructors quite go beyond the limits of their art, and instruct their pupils in rope-dancing, for the sake of exhibiting their own skill in the skill of their scholars. To teach the infinitesimal calculus in a gymnasium is a similar excess.

No teacher should ever seek, by excessive stimulation, to spur on his pupils to an unnatural point of attainment, which most of them can never reach. If a few of them reach the desired summit, they usually retain their place on the peak of their intellectual Mont Blanc only a very short time, and by the most violent exertions. When the teacher ceases his efforts, or they leave school, they throw aside the study in disgust; and, according to the fixed law of nature, the excitement is succeeded by a relaxation. The teacher should be contented and pleased, if his pupils attain to some little excess of knowledge, doing so under healthy natural incentives, not too great for their faculties; if they gain an entirely clear understanding and entire facility in the study up to this point. What has been thus acquired is not easily forgotten after the school-years; and, even if he goes no further with that study, he will always retain a certain degree of knowledge, which, if his teacher was intelligent and judicious, can not easily fail him.

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[*] The ordinance of 1812 prescribed the first six and the eleventh and twelfth books of Euclid.

[†] See Prof. Lentz, in the "*Annual Report on the Royal Frederic-College, at Königsberg,*" (*Jahresbericht über das Konigl. Friedrichs-Kollegium, in Königsberg.*) 1837.

[‡] The mathematical instruction at the schools of arts and trades, and polytechnic schools, is meant to determine the future practical ability in mathematics; that in the gymnasia, rather the formal knowledge of it. The former, therefore, requires a higher degree of skill in the pupil, which also must be based upon a scientific knowledge. It must cultivate the roots of the study to develop it.

I can not resist quoting a case given by Diesterweg, to illustrate what I have said about excessive stimulation of scholars. In speaking of de Laspé, principal of a private institution at Wiesbaden, he calls him a natural genius in didactics, who "accomplishes extraordinary things by the help of enthusiasm. For," he continues, "is it not praiseworthy and instructive, even if on other accounts to be disapproved of, to see girls of twelve occupying themselves, with genuine delight, with mathematical constructions, and, without assistance, solving problems which any one would admit to be difficult for that age. Many instances," Diesterweg continues, "have occurred in de Laspé's school, to show with what enthusiasm an energetic teacher can fill his scholars. I will relate one. High Mining Councilor K.,[*] during a visit to the institution, at the invitation of de Laspé, gave out to the boys and girls a geometrical problem. All, great and small, teachers and scholars, went to work on it. No one discovered the solution. Thus passed the first day. On the next, all went early to work on it again, but in vain. De Laspé endeavored to renew the enthusiasm of the school, but no one found out the solution. A dull feeling of weariness and despair came over the whole institution. Nothing could be accomplished in this way. The honor of the institution seemed to be at stake; de Laspé worked, and begun and ended his efforts in bad humor. On the fourteenth day he held an evening devotional exercise for encouragement, and prayed that God would strengthen him and the members of his institution for the solution of the problem. What was the result? At about three in the morning, a boy, in his night-clothes, ran to de Laspé's bedside; he had discovered it. De Laspé sprang up and struck a light; the boy went through his operation. It was right! The whole house was called together on the instant, and the triumph made known. De Laspé was a pedagogical genius." So far Diesterweg.

But does de Laspé, according to this account, really deserve the name of a pedagogical genius? Does a teacher deserve that name, who inspires girls of twelve with a truly unnatural passion for mathematics? a man who, when his whole institution has fallen into a dull weariness and despair because neither he nor any body else in it can solve a problem which a stranger has happened to propose to them, makes this foolish despair the subject of an appeal to God at an evening-prayer? And do not the question, "What was the result?" and the answer, that a boy discovered the solution—do not these constitute a pietistical statement of a providential answer to prayer? The "honor of the institution, which seemed at stake," is rescued, it is true; but what honor? So far as this story goes, I can see in de Laspé only a restless pedagogical zealot,* who urges his pupils to an unnatural mental over-exertion, by especial use of the spur of vanity; who makes fanatics of them. No more monitory warning could be given of an over-excitement calculated to destroy all childlike character. Let the reader only transplant himself in imagination into the despairing, brooding, and study—the abominable fourteen days' restlessness and excitement—of these teachers and poor children, thus hunted to the death, as it were, by their own vanity.

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[*] Kramer. See "*H. Pestalozzi*," by A. D., (A. Diesterweg,) p. 23.

All this seeking ended at last in the *Eureka* of a boy. But the efforts made by the teachers and pupils together show clearly how the inventive method ought never to be abused; or, rather, they show no particular method was used here at all. The teacher of a science or art ought to know, and be able to do, what his pupils are placed under his care to learn; how otherwise could he teach them? No blind man is calculated to be a guide.

Diesterweg visited de Laspé in 1817, and accompanied him and his pupils in a pedestrian excursion to the Johannisberg in the Rheingau. In passing through that region, whose beauty, famous from ancient times, has attracted to it such a multitude of travelers, to view the mighty stream, its vineyards and peaceful towns, with the wooded mountain in the background, the reader will fancy how delighted teachers and scholars must have been. But he will deceive himself.

They had to take much more care not to get lost while they were at work upon some lessons that required their whole attention. Diesterweg relates in particular the following: "In walking, algebraic problems were given out and solved, for several hours at a time; scholars as well as teachers proposing them. At evening, at the inn, after supper, they 'made language,' to use the technical term; that is, de Laspé discussed the laws of language with the pupils for several hours, no one showing fatigue or weariness. What would our boys say to this? I must publicly confess that I never saw any where so much enjoyment, so much pleasure in independent thinking and investigation."

Such "enjoyment" reminds me of the Dance of Death at Basle.

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* I judge only by this story, for I know nothing further of de Laspé sufficient to found an opinion.

NOTE.

COUNTERS IN ELEMENTARY ARITHMETIC.—I used white and yellow counters, of different sizes. The smallest white ones were units, larger ones tens, and still larger ones hundreds. To these I added four yellow sizes; the smallest for thousands, and larger ones for ten thousands, hundred thousands, and millions. I did not immediately go any further.[*] The units served all the purposes for which beans, marks, &c., have been used; as, practice in counting, division into equal and unequal parts, &c.

In teaching written arithmetic, I found the following use of counters very convenient. The children of from six to eight years old usually knew as much about money as that, for instance, four pfennigs made a kreuzer, and six kreuzers a sechser. I took advantage of this actual experience of theirs to base my instructions. After they had learned sufficiently well to count with the unit counters, I said, "Just as the large sechser is worth six little kreuzers, so is one larger counter worth ten small ones; so we will call the large one a ten. Then I put with the ten nine more ones, successively, and so taught them to count from ten to nineteen; then I added a tenth one, and changed the ten ones for a second ten, and called the two tens twenty. In the same way I went on to ten tens. Now, just as ten ones is a ten, so are ten tens a hundred; which is again represented by a larger counter. On these exercises there may be constant exercises; such as, How many ones in two, three, &c., tens? How many ones, or tens, in one hundred? Then count out ten times ten ones, and then substitute ten tens, to the same value.

By using the counters on the table, the writing and reading of figures will be easily learned. It must only be remembered that the ones stand in the first place to the right, the tens next, &c. Then two ones may be laid down, then three tens, then a hundred, and lastly, at the extreme left, a thousand. Then the pupils may be taught to read them off, thus:—Two; thirty; thirty-two; one hundred; one hundred and thirty-two; one thousand; one thousand one hundred and thirty-two.

Writing the figures connects itself very naturally with these exercises. Supposing the children can write the Arabic figures, they may be told that they must be written exactly as the counters lie on the table; that the first figure to the right represents ones, just as the first counters to the right do; the next tens, &c. The figures should at first be written in the same order in which they are at first explained; beginning with the units.[†]

It can now easily be made clear what is the use of the cipher in written arithmetic. Let the pupil first lay down twenty-one in counters; two tens and a unit. But, ask him how will he express two tens and *no* unit? There must be a sign to show that there is no unit. I took, for this purpose, small round white pieces of pasteboard, which I put wherever there was no figure, whether in the place of units, tens, hundreds, &c. If it be required to lay down 302, the child placed two ones, a cipher for no tens, and three hundreds.

The orderly placing of the counters, the reading off of the number, and the writing of it should proceed together. If there are several pupils, there may be a division of labor; some laying down counters and others writing, and then each reading off the work of the other.

In this way the children will gain a knowledge of the decimal system, and of the profound wisdom with which the ancient Hindoos arranged their figures by it.[‡] But the counters can be further used in explaining the ground-rules, especially addition and multiplication, Under the columns of counters lay a rule, for the line, under which to place the sum. If the units add up to 12, change ten of them for a ten, put it with the column of tens, and put the remainder of 2 under the units, and so on. When with the aid of the counters the children have learned to count, the decimal system, writing and reading figures, and a more or less clear knowledge of the four ground-rules, the counters should be gradually disused.* They might be afterward used again in explaining decimal fractions.

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[*] It would be well to have 1, 10, 100, 1000 printed on the counters; and on the other side I, X, C. M. according to their value.

[†] The Roman letters on the counters can be easily used so as to show the value of a figure, *one, for instance, in different places.*

[‡] *It was not the Arabs*, but the Hindoos—as was already stated—who invented the decimal

EXPLANATION OF THE USUAL ABBREVIATED PROCESSES IN WRITTEN ARITHMETIC.—I will illustrate by a few examples what is said in the text of the means by which our teachers may endeavor to explain written multiplication and division. For instance, the example in multiplication, 6×11356, may be worked in three different ways, as follows:—

a.	*b.*	*c.*
11356(6	11356(6	11356(6
68136	36	60000
	300	6000
	1800	1800
	6000	300
	60000	36
	68136	68136

The first, *a.*, is the common abbreviated form; *b.* and *c.* give the solution at length, as it ought to and must be worked, before the abbreviated mode. For the solution of *c.*, we will suppose a case. Six brothers inherit each 11356 florins, What is the entire sum? The multiplicand consists of one ten thousand, one thousand, &c., down to six units. Each heir will have one ten thousand, in all sixty thousand; also one thousand, in all six thousand; and so on; lastly, each will receive six units, in all thirty-six. Add these products together, and you will have 68136. The example *b.* is entirely similar to example *c.*, except that here the multiplication begins with the units, as in the abbreviated mode. The latter will become clear by comparison with *b.* It will readily be seen that the abbreviation consists in this: that the product of each separate place is not written down in full; but that, when for instance the product of the ones furnishes tens, they are kept in mind and added to the product of the tens, &c.; so that the additions in example *b.* are performed in the mind. Thus, 6×6=36=3 tens and 6 units, which last are put in the units' place in the product. Then, 6×5 tens=30 tens, which with 3 tens from the first product makes 33 tens, or 3 hundred and three ones, which remainder put in the tens' place in the product; and so on.

The pupil can thus be shown that the abbreviated operation in example *a.* must begin from the lowest place, so that the overplus from each place may be carried to a higher.

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system and the wrongly-named Arabic figures. What other mathematical discovery can be compared with this? See Whewell, I., 191.

* In the arithmetics of Diesterweg, Stern, &c., other modes of making numbers visible are used. As to counters, the question is, whether they can be used in schools for a large number of pupils Herr Ebersberger, of the Altorf Seminary, advises to fit up a large blackboard with parallel horizontal ledges or gutters of tin, in which large counters may be set up, as letters, &c., are set up in using the board to teach reading, &c. Dr. Mager remarks, in his treatise "*On the Method in Mathematics*," (*Ueber die Method der Mathematik*,) that he has used counters in teaching. He says, (p. xviii.,) "The second stage brings in the decimal system, first with counters and then with figures. The smallest counters represent units, a larger size tens, the largest hundreds. It is a pleasure to see how the children can use the counters to add, multiply, subtract, and divide. When they can work both with counters and mentally, nothing is easier than to work the same problems in figures; the greater convenience of the written method induces the children to learn it quickly."

If the abbreviated mode of multiplication has been mechanically learned, still more has the abbreviated mode of dividing "over the line." In this, great heaps of figures are carefully piled up together, and a mistake in the construction would cause an error. Take, for example, 7860÷12=655. The work is done thus: write the dividend and the line at the right hand; write the divisor, 12, under 78; ask not how many twelves in 78, but how many ones in seven. Try with seven times; 7×12=84, it does not go; then with 6; it will go; write 6 at the right of the line; six times one from seven leaves one, which write over the seven; then say, twice 6 is 12, from 18 leaves 6, which place over the 8. Now make another divisor by writing 1 under 2, and another 2 next the 2, under 6, and make 66 the next dividend. Then, 1 in 6 5 times; write 5 at the right of the 6 in the quotient; 5 times 1 from 6 leaves 1, which write over the upper 6; then, twice 5 is 10, from 16 leaves 6. Then remove the divisor along again; and say, 1 in 6 5 times, 5 from 6 leaves 1, twice 5 is 10, 10 from 10 leaves nothing; and set the second 5 at the right hand in the quotient. As the numbers are used, they are struck out. There is not the least effort to understand the work. When it is completed it is proved by multiplication; and, if wrong, there is no intelligent endeavor to find the error, but the operation is to be repeated.

X. PHYSICAL EDUCATION.

[Translated from Raumer's "*History of Pedagogy*," for the American Journal of Education.]

PHYSICAL EDUCATION includes,

1. Care of the health.
2. Inuring to endurance and want.
3. Training in doing; in bodily activity. Gymnastics.[*]
4. Training of the senses, especially of the eye and ear.

I. CARE OF THE HEALTH.[†]

The realists have paid especial attention to the care of the health; such as Montaigne, Bacon, Locke, and Rousseau.

At a later period, Hufeland's "*Art of Preserving Life*" has had much reputation. Much of what he says relates to people whose nerves are disordered by overexertion, and is useful for the recovery of such.

Care of health includes, first, diet. The most harmful food had become even customary among us, old and young; and it was at a late date that we began to examine the operation even of the most usual articles of diet. The temperance societies, for instance, have come out all at once against brandy, and its numerous family. All such measures have influenced the diet of the young, but have not had a thorough operation on it. Who does not know how many parents now give their young children coffee every day; and how extensively the children drink tea.

Warnings enough can not be given against the frequenting of the stomach-destroying confectionery-shops.[‡] Another fact of the same kind is the sight of even boys walking about with tobacco-pipes and cigars in their mouths.[§]

Clothing.—Rousseau, and the Philanthropinists, his followers, were the first who declared war against unsuitable modes of clothing children.* The Turners introduced an appropriate, convenient, and healthful costume; and endeavored at the same time to oppose the foolish vanity of a change of fashions. I shall say nothing at all of the fashions as prevailing among women. To appear new is always the thing sought after, even if a new monstrosity is the result. The sense of beauty seldom betrays, but yet we have seen the hoop-petticoat and the French rococo style reappear.

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[*] Bacon, in a section on Athletics, says, "Endurance, both of active exertion and of suffering. Constituents of active exertion, strength, and quickness; enduring suffering is either patience under indigence or fortitude in pain." (De Augm. Scient., 4, 2, 113.)

[†] I have already treated of the education of the youngest children.

[‡] This evil increases in Berlin, every year. In the time of the Turning societies, therefore, they and the cake-bakers were utterly at variance.

[§] And have any good results followed from the efforts of the health-police against the sale of opium-cigars, for instance, which were openly vended at the Frankfort fair? Woe to all people who learn to love that poison!

When shall we cease to make children sleep in deep, stupifying feather-beds, and in unventilated chambers?

Early to bed and early to rise, says the old proverb. Excessive mental labor is harmful to all, especially by night, and is utterly destructive to the young, and most of all when drowsiness is kept away by coffee, &c. Such a course results in a truly horrible condition of overstimulation, in which even a healthy person completely loses control over himself.

The body is a temple of the Holy Spirit. How do those desecrate that temple, whose god is their belly! And it is most fearfully defiled and destroyed by the withering secret sins which have made such fearful progress amongst our youth. But our educators do little to avert the evil—they rather pour oil upon the fire. When, to the influence of stimulating drinks, excessive eating, hot feather-beds, we add that of provocative dances, plays, and romances, and of those indecent pictures which make such deep impressions on the minds of the young, and destructively stimulate and entice during waking and sleep, who can wonder that such sins gain influence over our youth, and destroy them, soul and body? Do we make serious efforts to prevent these influences? Do we not rather behold them with indifference; arranging the dances ourselves, taking the children to the theaters when Kotzebue's and other loose pieces are acted? Is it not so? And does not all the world cry out, Pietism! if any one says a word against this destruction of souls?

But the question has been asked, almost despairingly, by many, How are these secret sins to be prevented? First, by not giving them any assistance by making the young more susceptible to them, by rendering them morally and physically weak and corrupt. And, second, by positive discipline and strengthening of the body. The best protection of all, however, is an education in the fear of God; a means which may avail even when the destruction has gained a footing. Those who are corrupted in this way must be managed according to their peculiarities. To shameless cowards the truth should be told, that their habit is suicide; and that, if they go on in it, they have already lived most of their days. The sight of any one who has become idiotic by onanism produces a powerful effect on boys. There are also, however, cases where it is better to encourage, and to give assurances that, upon a cessation of the habit, the body will become strong again, though on that condition only.

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* See the chapter on him.

Lying goes hand in hand with this devilish secret vice; and bodily and mental filth, and atrophy.

Lorinser's article "On the protection of health in the schools"* directed the eyes of educators to the startling condition of the health of the pupils in our gymnasia. It was asked, What are the universal sources of the destructive physical condition of the schools, that make their pupils die faster than other German youth? Lorinser answered, The evil is based in the number of studies, the hours of instruction, and the home labor.

The number of studies, especially since real studies have made way into the gymnasia, has increased since that time. Still, several Prussian gymnasium programmes indicate that the number of hours of instruction was as great formerly as now; because as much time was devoted to their fewer studies as to our more numerous ones. Thus the reason of the evil should not be found in the number of hours of instruction, unless we answer that the scholars of the present day are less capable of study than they were then. Nor should the number of studies be blamed, without further examination; for fewness of studies has its evils too. Ratich taught "Only one thing at once. Nothing is more injurious to the understanding than to teach many things at the same time; it is like cooking pap, soup, meat, milk, and fish all in the same kettle, at once. But one thing should be taken up in order after another; and only when one has been properly attended to should another be entered upon. A single author should be selected for each language, from whom it should be learned. When he is thoroughly understood, and as it were quite swallowed down, another may be read. Nothing new should be taken up until what went before is understood quite thoroughly, and to entire sufficiency."

On this it has been remarked,

"Is this really according to the 'course of nature?' Would it be natural to eat broth alone, or fish alone, for eight months together, and even longer, as Ratich's pupils studied Terence? Is not a variety of reading matter, as in Jacobs' excellent readers, much more suitable to it? Just as we never eat one thing alone, but bread with meat, for example, it should be the care of the teacher not to clog his pupils with one thing forever. And, as the skillful host tries to furnish dishes which are suitable to each other, and which by their very connection shall conduce alike to good flavor and good digestion, so should the skillful pedagogue teach the same pupils, during the same term, various things, such as will serve to complete each other, and by whose alternation the pupil shall remain fresh, not satiated, but mentally nourished in a healthy way."

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* This appeared, in 1836, in the "*Berlin Medical Gazette*," (*Berliner Medicinische Zeitung*.)

A judicious interchange of studies would be favored even by Lorinser; but an injudicious one—consisting merely in a restless changing from one thing to another, without ever asking whether all these single studies will harmonize together, and become one complete whole in the boy's mind—such an interchange I shall, of course, not need to discuss at all. On that point I agree wholly with Lorinser's complaints.

But the chief reason of the bodily as well as the mental bad condition of the pupils seems to lie less in the multitude than in the ill-contrived method of the doing of the school-work. Many things are forced upon the pupils which they do not like; especially a chilly, abstract method of studying language, and an unnatural, over-stimulated mode of mathematical study and production. Nor is this the case at the gymnasium merely; the evil is still greater in the lower schools. And, on the other hand, the pupils are kept away from what is appropriate for them, and from what they enjoy. Such a perverted method of mental stimulation and over-stimulation must necessarily destroy the body as well as the mind.

The case requires particular attention where each teacher in a school is attentive to his own department only, and makes such requirements upon the scholars as if they were under his instruction only, and had no other work to do. Thus, when the historical teacher requires of them to learn the most trifling things, such as innumerable dates; the geographical teacher, the smallest towns and rivers, the number of inhabitants of unimportant cities; the French teacher, the six first books of "*Télémaque;*" or the Latin teacher, many pages of the "*Loci Memoriales,*" to be committed to memory; when the mathematical teacher spurs them forward to the integral calculus, &c.; in such a case, the conscientious scholar must indeed succumb to the burden of "home-labor," or must quite give up conscientious work.*

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* As an instance of the unreasonable conduct of many department-teachers, it may be mentioned that, in a certain well-known institution, the teacher of mathematics set as much home-work to the scholars to do as all the rest of the teachers together.

II. INURING TO ENDURANCE AND WANT.

What has already been said indicates clearly enough that nothing is usually done in this direction by parents; but quite the contrary. It is usual to enervate the children, to seek to satisfy all their desires. Nor should this astonish, in an age when the most fleshly epicureanism prevails. How could strong self-denial and self-command grow out of such an idle, pleasure-loving home-life? These virtues are to most persons bitterness and folly. Woe to humanity, when nothing is desired except mere undisturbed animal enjoyment, and when all nobler aspirations pass for folly!

It is difficult to proceed methodically in the more passive portion of bodily training. This must be lived rather than taught. Boys in the country, who run about out-doors, in the hottest as well as in the coldest weather, in rain and snow, become hardened against wind and weather, without their parents or teachers knowing any thing of it. But if a child grows up in a great city, where it is probably half an hour's walk and more to the nearest city-gate, especial pains must be taken to see that he goes into the fresh air every day. For this reason gymnastic establishments are an especial need of large cities.

It is important that the child should become inured to wind and weather during the first years of his life.

Journeys on foot afford the best opportunity for hardening and privations of all kinds. Bad weather, bad roads, miserable inns, and innumerable other inconveniences, annoy even the most fortunate traveler. But all this will be endured, especially in the company of companions, not only with patience but with superabundant delight. He who makes some sour faces at rain and bad food suffers double.

It is to be lamented that steamboats and railroads have made such a destruction of journeys on foot. Such a flitting across countries is entirely useless. It does not strengthen the body; one who goes in one day, by railroad, from Manheim to Basle, seems to himself afterward to have dreamed of an exhibition, where the Rhine and Neckar, the Black Forest and the Vosges, Heidelberg, Carlsruhe, Strasburg, &c., were all passed rapidly before his eyes—all is to him a transitory cloud-picture.

In war, young persons who have been hardened, who are easily satisfied, and not corrupted by luxury, are far superior to their opposites. The latter are quite without self-control, and as if without their senses or courage, upon being summoned to turn out a little early in the morning, especially after having a cold night in the open air.

III. TURNING.

It is well known how highly the Greeks valued gymnastics, and how the Roman boys practiced bodily exercises as a preparation for war. We are equally well acquainted with the bold strength and activity of the ancient German nations, and their chivalric renown in the middle ages. As the cities became prominent, the citizens were not behind in this respect, and there grew up among them fencing-schools for the mechanics, privileged by the emperor.[*]

That bodily exercise is an important part of the training of the young was a truth recognized by Luther; but which, since the sixteenth century, has been made most prominent by those already mentioned as realists.

Luther says,[†] "It was right well thought of and ordered by the ancients, that the people should exercise themselves, and learn something useful and honorable, so that they might not fall into rioting, vice, gluttony, drunkenness, and gaming. Therefore these please me the best of all—these two exercises and amusements, to wit, music and tilting, with fencing, wrestling, &c.; whereof the first drives away care of heart and melancholy thought, and the second gives well-proportioned and active limbs to the body, and keeps it in good health, by jumping, &c. But the most weighty reason is that people may not fall into drunkenness, vice, and gaming, as we see them, sad to say, in court and in city, where there is nothing except 'Here's to you! Drink out!' And then they gamble away perhaps a hundred florins, or more. Thus it goes, when men despise and neglect such honorable exercises and tiltings."

Luther observes, very correctly, that an active, healthy man, skillful in his exercises, and who takes pleasure in them, will for that very reason energetically withstand the loose and vicious life of mere pleasure-seeking, while the sensual at once give up to it.

Montaigne, the realist forerunner of Rousseau, blames those weak parents who can not bring themselves to keep their children on simple food, to see them covered with sweat and dust from their exercises, riding a spirited horse, receiving a smart thrust in fencing, or a kick from the discharge of a gun. "He who desires," he says, "to see his son a strong man, must certainly not make him effeminate in his youth, and must often set aside the rules of the physician. It is not enough to make his mind firm; his muscles must be made firm too. I know well how my own mind is tormented by its companionship with so weak a body, which depends so much, and bears so heavily, upon it."[‡]

Rousseau says, "The body should be strong, that it may obey the soul—a good servant should be strong. The weaker the body is, the more it commands; and the stronger, the more it obeys.[*] A weak body weakens the soul." "If you would develop the understanding of your pupil, develop the powers which his understanding is to govern; incessantly train his body. Make him strong and healthy, that you may make him wise and intelligent; make him work, run, cry out, always busied about something; let him be a man in strength, and then he will be one in reason."[†]

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[*] See Jahn's "*Turning System*," (*Turnkunst*,) p. 278.

[†] Walch, XXII., 2280, 2281.

[‡] *Essays*, I, 299—301.

We have already seen how these counsels of Rousseau were followed in the Dessau Philanthropinum, where they practiced gymnastics, and took pedestrian journeys with the boys. Rector Vieth, of Dessau, a man of great skill in many bodily exercises, published an "*Encyclopedia of Bodily Exercises*," (*Encyklopädie der Leibesübungen.*)

But the greatest attainment was made at Salzmann's institution, under Guts Muths; who wrote a work on gymnastics, which gained a wide influence.[‡] It was founded upon "*Emile.*"

The chief principle of physical education is, according to Guts Muths, "Train all the powers of the physical man to the point of utmost possible beauty and usefulness of the body, as of the teacher and servant of the soul."[§] Gymnastics is "a system of exercises for the body, intended to perfect it."[‖]

Guts Muths, with great care and judgment, worked out this system of discipline in the fullest detail; and at Schnepfenthal there was serious earnestness in the department of physical training. The children played, not only for the sake of relaxation from the labor of the school, but their bodily exercises were made a necessary part of their intellectual training, and an indispensable department of instruction in the school.[¶]

Meierotto, the eminent Berlin rector, erected, in 1790, a roomy exercising-place, in connection with the Joachimsthal Gymnasium, including among other things a swinging-tree; and this may be considered a forerunner of the subsequent Turning organizations in Berlin. At the repeated request of Meierotto, King Friedrich Wilhelm II. gave 30,000 thalers (about $22,500) toward the purchase of the ground.[*]

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[*] Just as Marcellus Palingenius had said:

"Corpus enim male si valeat, parere nequibit
Præceptis animi, magna et præclara jubentis."

[†] I have said more about gymnastics, and errors in "*Emile,*" in my chapter on Rousseau. q. v.

[‡] "*Gymnastics for the Young,*" (*Gymnastik für Jugend.*) By Guts Muths. Second edition. Vienna, Doll, 1805. Prof. Klumpp issued a third edition, with many additions. The first edition was translated into Danish, English, and French.

[§] Gymn., p. 31.

[‖] Ib., p. 13.

[¶] I shall hereafter discuss Guts Muths' instructions for the cultivation of the senses. In 1817 he published a work on Turning, which set forth the relations between Turning and collective exercises. Turning has no more reference than school instruction has to any particular class; but seeks a general development, equally beneficial in any condition of life. Turning is to develop the bodily independence of individuals; exercising, to make them efficient members of a body. Games, in which a company of Turners put forth free, graceful, general exertions, are much preferable to a stiff exercise under direction of a subaltern. Skillful Turners can very quickly learn the infantry manual. It is very good to teach soldiers the Turners' exercises; but it requires instant attention when the Turners begin to play soldiers.

Fichte, in his orations to the German nation, strenuously recommended bodily exercise, and cited Pestalozzi. He says, "Nor must another subject, brought forward by Pestalozzi, be omitted; namely, the cultivation of the bodily activity of the pupil—which should go hand in hand with the mental. He requires an A B C of this department. His most important observations on the subject are as follows: 'Striking, carrying, throwing, pushing, drawing, whirling, wrestling, swinging, &c., are the simplest bodily exercises. There is a natural order of succession from the beginning of these exercises up to a complete knowledge of them; that is, to the highest degree of activity, which makes certain the hundred applications of striking, pushing, swinging, and throwing, and gives certainty of hand and foot.' According to these views all depends upon the natural order of study; and it will not suffice to begin blindly and arbitrarily with any exercise whatever, and then to assert that we have a physical education, as the ancient Greeks had. In this respect every thing is yet to be done; for Pestalozzi did not prepare an A B C of this department. But such a one must first be prepared; and, to do it properly, there is needed a man equally at home in the anatomy of the human body and in scientific mechanics; who unites with this knowledge a high grade of philosophical character, and who is thus fitted to bring to a condition of symmetrical perfection the machine which we may consider the human body as intended to be; and so to conduct every step in the only possible right course as to prepare and facilitate every subsequent one, and thus not only not to endanger the health and beauty of the body and the powers of the mind, but to strengthen and increase them, and thus to develop this machine from every healthy human body. The indispensableness of this department, in an education professing to train the entire man, and claiming to be especially appropriate for a nation seeking to recover and afterward to maintain its independence, needs no further mention to be perfectly clear."[†] Pestalozzi's institution did not accomplish what Fichte expected of it in respect to bodily exercise; but among his hearers there was one who was perhaps influenced by these very addresses to his distinguished labors for gymnastics; namely, Freidrich Friesen.*

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[*] "*Attempt at an Account of Meierotto's Life*," (*Versuch einer Lebensbeschreibung Meierotto's.*) By Brunn. Berlin, 1802. p. 312, &c.

[†] "*Oration*," &c., pp. 171, 172. "*Weekly for Human Development*," (*Wochenschrift für Menschenbildung.*) Vol. 2, No. 11.

Bodily exercises were commenced at Yverdun in 1807; and there is an account of the mode pursued, and of the views entertained on the subject, in the first volume of Pestalozzi's "*Weekly for Human Development*."† This account contains much that is correct and well worth consideration, and also many errors. It is true that the body should not be developed in a partial manner, that is, not for fencing or jumping alone; but that the gymnastics pursued should aim at a harmonious total development of the whole. The bodily ill condition of manufacturing operatives is also well described.‡ "Manufacturing labor," it says, "is undermining the physical strength of our people still more than all this. 'Stand up there, boy, at the carding-table; girl, sit at the cotton machine, or the embroidering machine; spread your colors from morning to night, or turn your wheel, or sew, from morning to night; and I will pay you more than a farmer or his wife will earn with their hacking and grubbing.' Thus have our poor been addressed, for forty or fifty years; but they did not say, This one-sided sort of occupation will make you crippled and sickly. They did not say, When the cotton manufacture ceases to prosper, when power-looms are invented, when embroidery goes out of fashion, you will be left with your distorted hand, your weakened bones, and injured digestion, as unfit to learn any other manufacturing as to use the bill or the axe. You will live out your old age a worn-out and hungry beggar. You will know nothing except what you have learned, and you have sacrificed your general strength of body and its cultivation to a one-sided and crippling occupation, and to its deceptive profits. Examples of such destruction have long been before our eyes; but white bread, bacon, wine, brandy, and insinuating manners make a deeper impression than all these dangers. And every thing that was bad, on the part of the parents, drove the children, even down to the youngest, to these carding-tables and machines. Why did these wretched people make such sickly creatures of their children? It was because they shared with them the white bread, and bacon, and wine, and brandy that they earned. In many places the miserable school-rooms had already prepared the children for the miserable factory-rooms. The parents took them out of the former and drove them into the latter, where they would at least earn them something to eat. Thus the number of sickly people increased in the land to thousands. But now they no longer receive their wages, or their white bread and bacon: but these miseries of the land have resulted in this; that our people and their physical condition, in many places, need, more than elsewhere in Europe, the assistance of a wise government, and of the power of the human heart, which is now reasserting itself, against the consequences of this manufacturing selfishness, and their depth of physical degradation and weakness."

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* See the extracts below, from Jahn's preface to the "*Turning System*."

† Nos. 3—6, from 3d June, 1807, onward, pp. 33—87.

‡ Ib., pp. 49, 50.

But the higher classes had become hardened, and had lost all natural sensibility and sympathy.[*] "But it is not the only evil," the article continues, "that innumerable numbers of our poor are fallen into a condition in which they look more like ghosts than like men. The consequence of these errors, as to what we physically need and should be, have introduced, even into the minds of our wealthy and healthy people, an absurdity and weakness which is shown by singular peculiarities. In many places, if you would be reckoned among the honorable and respectable part of the community, you must not, even in the hottest weather, take off your coat and carry it on a stick or on your arm. And your children must, all summer, wear stockings, and have a cap on their heads; must not climb trees, nor jump over ditches, &c. And, in the same places, the most unreasonable stiffness of etiquette has arisen from these notions of maintaining respectability. You must not cut wood before your door, even if you might escape a fever by doing so. The physical degradation, which reached its hight by means of the cotton and silk manufactures, had commenced before, in the age of universal perukes and small swords. This was the period which laid the real foundation of our physical troubles, in high and low ranks." And the discontinuance of the popular festivals is justly stated to have aided in producing this unhealthy physical condition. The article says,[†] "A new and arbitrary and unintelligent police interferes with all the pleasures of the young. The national festivals, which expressed the powerful ancient popular spirit, began to be disused; they were gradually driven away from our plains, and forced back among the mountains. And even among those hights they became degraded. They are no longer an expression of the strength of the people, a means of elevating and distinguishing the strong men of the land, or objects of popular attention and confidence. They sank down to mere paid exhibitions for strangers looking for exhibitions of skill, and for the rich who paid largely for them. And if we should to day endeavor to renew them, without renewing our people themselves, they would still not have their ancient appearance. They would be unworthy of our ancestors; but for *us, as* we are, satisfying, entertaining, and misleading to our wish."

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[*] Ib., pp. 50, 51.

[†] Ib., p. 51.

* * * "It is such a bodily training as the children of our ancestors had and enjoyed that must be given to our children; and the spirit of their popular gymnastics must be raised up again. But this is no partial spirit; it submits to no influence from the popular festivals. On the contrary, these, if genuine, are only the expression of the prevalence of it. It must be just as universally active and visible in households, in schools, in the labor of the field, in Sunday sports, and in amusements, as on the Alps, and at the shepherd's festivals. It must appear in the opinions of the people respecting their corporeal necessities, and in their care for them. The attainment of this object is entirely impossible, unless there is awakened in the young, from childhood up, and made universal, a lofty, active, and independent sense of power; and this will inspire the child, of itself, to all which is desirable for the salvation of the fatherland."

Who would not subscribe to these views of Pestalozzi's? But who can approve of the method of teaching gymnastics in his institution? The same article goes on to say,[*] "The essence of elementary gymnastics consists in nothing else than a series of exercises for the joints, by which is learned, from step to step, all that the child can learn with respect to the structure and movements of his body, and its articulations." And again,[†] "He can acquire this knowledge in the quickest and easiest way by means of these questions, What motions can I make with each separate limb of my body, and with each separate joint of it? In what directions can these movements be made, and in what circumstances and positions? How can the movements of several limbs and several joints be combined together?"

Would it not be imagined that this was a system of gymnastics for jointed dolls? The objects of it have joints, and nothing but joints; and what is sought is, to find what their joints will do, not what their flexibility of body will do.

There now follow some methodical exercises; not of the body, but of the joints. A, movements of the joints of the head; B, of the body; C, of the arms; D, of the legs. Each separate joint is first to be exercised by itself, and then in connection with limbs whose joints have already been exercised. No joint is omitted; in the arms, for instance, are exercised the elbow-joint, the wrist, and the finger-joints. Of the last he says, "Here also the connection and separation of the movements must receive special attention."

In short, we find in the gymnastics of the Pestalozzian school, as in their other educational departments, an unreasonable share of elementarizing; in the present case even reaching an obvious degree of caricature, at which an indifferent spectator might laugh, but at which the weary, overdrilled children would probably cry.[*]

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[*] Ib., p. 64. [†] Ib., p. 69.

We now come to a man better fitted than any of his predecessors to lay out a new course for bodily exercises, and who did actually lay out such a course. This was Friedrich Ludwig Jahn.

In his work, "*The German Turning System*," (*Die Deutsche Turnkunst*,)[†] he gives a history of his undertaking. This is so peculiar, and so characteristic of this remarkable man, and his useful labors, that I shall give the following extracts from it:—

"Like many other things in this world, the German Turning system had a small and insignificant beginning. In the end of the year 1809 I went to Berlin, to see the entry of the king. At that celebration a star of hope arose upon me; and, after many errors and wanderings, I became established here. Love to my fatherland, and my own inclinations, now made me a teacher of youth, as I had often been before. At about the same time I printed my '*German Nationality*,' (*Deutsches Volksthum.*)

"During the beautiful spring of 1810, a few of my pupils began to go out with me into the woods and fields on the holiday afternoons of Wednesday and Saturday, and the habit became confirmed. Their number increased, and we had various youthful sports and exercises. Thus we went on until the dog-days, when the number was very large, but very soon fell off again. But there was left a select number, a nucleus, who held together even during the winter, with whom the first Turning-ground was opened, in the spring of 1811, in the Hasenheide.

"At the present time, many exercises are practiced in company, in open air, and before the eyes of all, under the name of Turning. But then the names Turning system, Turning, Turner, Turning-ground, and the like, came up all at once, and gave occasion for much excitement, scandal, and authorship. The subject was discussed even in the French daily papers. And even here, in our own country, it was at first said, The ancient German ways have brought forth a new folly. But that was not all. Unfavorable opinions sprang up, from time to time, as numerous as the sands of the sea. They had never any reasonable ground, and it was laughable to see how they opposed with words that whose works were speaking so plainly.

"During the winter we studied whatever could be got on the subject. And we reflect with gratitude upon our predecessors, Vieth and

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[*] This system of gymnastics teaches the exercising of every joint of the body, just as the "*Book for Mothers*" teaches the knowledge of them.

[†] Jahn published this work, in connection with Eiselen, at Berlin, in 1816. Its motto was, "*The arts are easily lost, but are only found again with difficulty, and after a long time.*"—*Albrecht Dürer.*

Guts Muths. The stronger and more experienced of my pupils, among whom was my present assistant and fellow-laborer, Ernst Eiselen, made a very skillful use of their writings; and were able, during the next summer, to labor as instructors in Turning. Among those who then devoted themselves especially to swinging exercises, and afterward assisted in the full and artistic development of them, and even became thorough masters in them, were Pischon and Zeuker, who fell, on the 13th of September, 1813, at the Göhrde.

"In the summer of 1812, both the Turning-ground and system of exercises were enlarged. They became more varied, from Turning-day to Turning-day; and were mutually developed by the pupils, in their friendly contests of youthful emulation. It is impossible to say in detail who first discovered, tried, investigated, proved, and completed one or another exercise. From the very beginning, the Turning system has shown great community of spirit, patriotic feeling, perseverance, and self-denial. Every extension or development of it was used for the common good. And such is still the case. Professional envy, the absurd vice of selfishness, meanness, and despair, can be charged to no Turner. August Thaer, the youngest brother of a Turning-group of three, at that time invented sixty exercises on the horizontal pole, which he afterward increased to a hundred and thirty-two. While Thaer was taking care of a sick brother in the field, during the war, the same epidemic carried him off, in 1814, of which his brother recovered. He had before that time assisted in the establishment of a Turning-ground at Wriezen, on the Oder. Toward the end of the summer exercises of 1812, a sort of association of Turners was formed, for the purpose of the scientific investigation and artistic organization of the Turning system in the most useful and generally-applicable manner. This lasted during the whole of that winter in which the French were frozen up, during their flight from Moscow. In this association, the place of manager was, according to my wish, filled by Friedrich Friesen, of Magdeburg, who had devoted himself especially to architecture, natural science, the fine arts, and education; who had studied industriously under Fichte, and in old German with Hagen; but also, above all, knew what the fatherland needed. He was then employed in the teachers' and educational institution of Dr. Plamann, which, though not of great reputation, has educated able teachers for the fatherland. Friesen was a handsome man, in the fullness of youth and beauty, perfect in soul and body, innocent and wise, and eloquent as a seer; a very Siegfried, full of gifts and grace, and beloved alike by old and young; a master of the broadsword—quick, bold, firm, sure, strong, and unwearied, after his hand had closed upon the hilt; a strong swimmer—for whom no

German river was too broad or angry; a skillful rider on any kind of saddle; and an ingenious practitioner in Turning, which owes much to him. He had no hesitation in advocating, in his free fatherland, whatever his soul believed. He fell by French treachery, in a dark winter night, on the Ardennes, by the shot of an assassin. No mortal blade would have conquered him in battle. There was none to love him and none to sorrow over him; but as Scharnhorst has remained among the old, so has Friesen among the young, the greatest of all.

"On the king's proclamation of February 3d, 1813, all the Turners capable of bearing arms entered the field. After long persuasion, I succeeded, at Breslau, in inducing Ernst Eiselen, one of my oldest pupils, to take charge of the Turning institution during the war. Still, it was after a hard conflict with himself that he remained at home, although doctors and soldiers alike represented to him, and his own experience daily proved, that, in consequence of a long previous illness, and bad medical treatment, the hardships of the war must necessarily be too much for him. I myself accompanied Eiselen from Breslau to Berlin, at the time when the Prussian army commenced its march, and the capital was already freed from the French; and introduced him to the authorities and the principals of schools, who promised him all manner of co-operation, and who have ever since shown confidence in him. Since that time, Eiselen has been at the head of the Turning institution during the summers of 1813 and 1814, and the intervening winter, and has conducted the exercises of those who were too young to carry arms.

"At the end of July, 1814, I returned to Berlin, and passed the rest of the summer and the first part of the winter in laboring industriously for the improvement of the Turning-ground. During the autumn, I had erected a climbing-pole, sixty feet high; a useful and necessary apparatus for climbing, and, in a level country, indispensable for training the eye to long distances. In winter, when the volunteers returned, bringing many Turners with them, the associated discussions upon the Turning system were renewed. The exercises of all the summer were considered and discussed, and the subject elucidated by argument.

"On the escape and return of Napoleon, all the Turners able to bear arms volunteered again for the field; only two who had fought during the campaigns of 1813 and 1814 remaining at home, from the consequences of those campaigns. The younger ones, who remained behind, now took hold of the work again, with renewed zeal. During the spring and summer of 1815, the Turning-ground received still further improvements and enlargements.

"In the following autumn and early part of winter, the Turning system was again made the subject of associated investigation. After the subject had been ripely considered and investigated in the Turning council, and opinions had been compared, experience cited, and views corrected, a beginning was made in collecting in one whole all the results of earlier and later labors on the subject, and all the separate fragments and contributions relative to it; a labor which has lastly been revised by my own pen.

"Although it was only one architect who at first drew the plan, yet master, associates, pupils, and workmen have all labored faithfully and honestly upon the structure, and have all contributed their shares to it. These shares can not now be separated again. Nor shall I be so unreasonable as to praise the living to their faces.

"This is a brief account of my work, my words, and my book. Neither of the three is perfect; but the book may serve to promote a recognition of its ideal. It is put forth only by way of rendering an account to the fatherland of what we have done and endeavored.

"This information will be welcome to many educators and teachers, friends of youth and respectable people, who know well what are the needs of the fatherland. And our former pupils, scattered throughout all ranks of civil life, will gladly hear an account of the present state of the system. From all sides have come repeated requests for a work on Turning. To this desire we have responded in writing as well as the circumstances and our own abilities would permit. We have held an active correspondence, even to the distance of beyond the Rhine and the Vistula. We have sent copies of portions of the third section to all who applied for them. The increasing diffusion of the system, and of improvements in it, are so rapid that it is impossible for the work to be perfectly complete in it. It was impossible for us to remain indifferent to the fact that the German Turning system, developed and brought out with so much labor, would receive injury from any half-knowledge, careless writing, or half-done work. From mere hearsay and looking on one can no more write on Turning than the blind on colors."

With the Turning system came up a peculiar language. This must be understood by any one who intends to acquire a full knowledge of Jahn and his system. He says, in speaking of it:—

"In science or art, the German language will never leave those who know and admire it in difficulty. The proper words will never be found wanting in it to express all degrees and all results. It will keep step with the real course of development, will be found sufficient for every new phase of our people, for every occasion of life, and will keep up with every advance of our people in refinement. But it must avoid the affectation of cosmopolitan folly. No single language has any thing to do with cosmopolitanism; its soul is the characteristic life of that one people.

"Any one setting about a new enterprise is not so much inclined to ask, Has any one ever attempted this before, or begun or finished the like? The question is, Ought this thing to be done? And the same is true of one who makes words. If he has proper regard for the fundamental laws of language, he is not open to blame. No carping critic is entitled to ask, Did any one ever say that before? The question is, Ought this expression to be used? Can not a better one be found? For every living language advances, with an irresistible movement; and grammarians and dictionaries come along in its track behind, judging of it.

"The maker of technical words ought to be an interpreter of the spirit which permanently governs the whole language. For this reason he must look back to the primitive times of the language, and must follow in the true path of its course of development. If, in investigating these original sources, he discovers any early-forgotten word, he should bring this into public notice and use again. To reproduce an ancient word, apparently dead, is a real increase and strengthening of the language. No word should be considered dead, while the language is not dead; nor obsolete, as long as the language retains its youthful strength. Buried roots, which are still alive, and can throw out a vigorous growth of new stems, twigs, and leaves, bring blessing and prosperity. The shoots and sprouts of the old roots proclaim a new spring, after the long cold of winter. Thus the language will free itself from botching and patchwork, and will again become pure and strong. Without such protection of its original roots, the language will become overburdened, like a baggage-horse or beast of burthen, and must at last succumb under its heavy load of unsuitable additions. Every ancient word brought into use anew is an abundant fountain, which feeds the navigable rivers, digs deeper the mountain-valley, and indicates the coming of the floods. The word '*Turn*' may serve as an example. From this word have been formed, and are now in use, turnen, mitturnen, vorturnen, einturnen, wetturnen; Turner, Mitturner, Vorturner, turnerisch; turnlustig, turnfertig; turnmüde, turnfaul, turnreif, turnstark; Turnkunst, Turnkunstler, turnkunstlerisch; Turnkunde, Turnlehre, Turngeschichte, Turnanstalt; and many others."

This preface is followed by a valuable and clear description of the separate Turning exercises, and of the games practiced; and instructions on the establishment and organization of a Turning-ground.

After these come valuable general information and instruction on *Turning* institutions, teachers, &c. If the proverb is ever true, it is true of Jahn, that the style is the man. Whoever would characterize him, must do it by giving matter from his works, in his own words. Accordingly, I give the following extracts from him:—

"The Turning system would re-establish the lost symmetry of human development; would connect a proper bodily training with mere exclusive intellectual cultivation; would supply the proper counteracting influence to the prevailing over-refinement; and would comprehend and influence the whole man, by means of a social mode of living for the young.

"As long as men here below have a body, and while a corporeal life is necessary to their earthly existence—which, if without strength and capacity, endurance and power of continued exertion, skill, and adaptability, becomes a mere inefficient shadow—so long must the Turning system be an important department of human education. It is incomprehensible how this art—so useful for health and life, a protection, a shield, and a preparation for war—should have been so long neglected. But these sins of an earlier rude and thoughtless time have now been more or less visited upon every man. And thus the Turning system is a subject of universal human interest, and is important every where, where mortal men live upon the earth. But still its special form and discipline must be peculiarly subject to the requirements of national and popular character. It must assume such a form as is given it by the time and the people; by the influences of climate, locality, country, and nation. It is intimately connected with people and fatherland; and must remain in the closest connection with them. Nor can it prosper except among an independent people; it is appropriate only to freemen. A slave's body is a constraint and a prison to a human soul.

"Every Turning institution is a place for exercising the bodily powers, a school of industry in manly activity, a place of chivalrous contest, an aid to education, a protection to the health, and a public benefit. It is constantly and interchangeably a place of teaching and of learning. In an unbroken circle, follow constantly after each other direction, exemplification, instruction, independent investigation, practice, emulation, and further instruction. Thus the Turners learn their occupation, not from hearsay, nor from following after some transient expression. They have lived in and with their work; have investigated it, proved it, demonstrated it, experienced it, and perfected it. It awakens all the dormant powers, and secures a self-confidence and readiness which are never found at a loss. The powers grow only slowly; the strength increases gradually; activity is gained by little and little; a difficult feat is often attempted in vain, until it is at last attained by harder labor, greater effort, and unwearied industry.

Thus the will is brought past the wrong path of obstinacy, to the habit of perseverance, in which is based all success. We carry a divine consciousness in the breast, when we realize that we can do whatever we choose, if we only *will*. To see what others have at last found possible, arouses the pleasant hope of also accomplishing the same. In the Turning association, boldness is at home. Where others are exercising in emulation with us, all exertion is easy, all labor is pleasure. Each at the same time strengthens the others by his labor, and confirms his own powers, and encourages and elevates himself. Thus the example of each becomes a model for the rest, and accomplishes more than a thousand lessons. No real deed was ever without result.

"The director of a Turning institution undertakes a high duty; and should approve himself thoroughly whether he is competent to so important an office. He must cherish and protect the simplicity of the young, that it may not be injured by untimely precocity. The youthful heart will be more open to him than to any one else. He will see, without concealment, the thoughts and feelings of the young, their wishes and tendencies, their impulses and passions, all the morning-dreams of youthful life. He stands nearest to the young; and therefore should be their guardian and counselor, their protection and support, and their adviser for future life. Future men are intrusted to his care; future pillars of the state, lights of the church, ornaments of the fatherland. He must be subservient to no temporary spirit of the age, nor to the condition of the great world, so often plunged in error. He who is not thoroughly penetrated with a childlike spirit, and national feelings, should never take charge of a Turning institution. It is a holy work and life.

"His reward will consist merely in the consciousness of having performed his duty. Old age comes more slowly upon us among the sports of the young. Even in the worst of times we can keep our faith, love, and hope when we see the fatherland renewing itself in the growth of the young. The teacher of Turning must abstain from pretenses; for every juggler can better deceive the outer world than he can.

"Good morals must be more implicitly the rule of action in the Turning-ground than even wise laws elsewhere. The highest penalty inflicted must always be exclusion from the Turning association.

"It can not be too often nor too deeply impressed upon the mind of every Turner, who lives such a life as he ought and who shows himself an able man, that no one is under heavier obligations than he to live a noble life, both in body and in mind. Least of all should he claim to be free from any requirement of virtue, because he is strong of body. Virtuous and accomplished, pure and active, chaste and bold, truthful and warlike, should be his rules of action.* Bold, free, joyous, and pious is the realm of the Turner. The universal code of the moral law is his rule of conduct. To dishonor another would disgrace him. To become a model, an example, is what he should strive after. His chief lessons are these: To seek the utmost symmetry in development and cultivation; to be industrious; to learn thoroughly; to intermeddle with nothing unmanly; to permit himself to be enticed by no seductions of pleasure, dissipation, or amusement, such as are unsuitable for the young. And such admonitions and warnings should be given in such terms as to insure a school of virtue from becoming one of vice.

"But, again, it should not be concealed, that the highest and holiest duty of a German boy or German youth is to become and to remain a German man; that he may be able to labor efficiently for his people and his fatherland, and with credit to his ancestors, the rescuers of the world. Secret youthful sins will thus best be avoided by setting before the young, as the object of attainment, growth into good men. The waste of the powers and years of youth in enervating amusements, animal riot, burning lust, and beastly debauchery, will cease as soon as the young recognize the idea of the feelings of manly life. But all education is useless and idle, which leaves the pupil to disappear, like a will-o'-the-wisp, in the waste folly of a fancied cosmopolitanism, and does not confirm him in patriotic feeling. And thus, even in the worst period of the French domination, love of king and fatherland were preached to, and impressed upon, the youths of the Turning association. Any one who does any thing foolish or insulting to the German manners or language, in words or actions, either privately or publicly, should first be admonished, then warned, and, if he does not then cease his un-German actions, he should be driven away from the Turning-ground, in the sight of all men. No one ought to enter a Turning association who is knowingly a perverter of German nationality, and praises, loves, promotes, or defends foreign manners.

"With such principles did the Turning societies strengthen, train, arm, encourage, and man themselves for the fatherland, in the gloomy, sultry times of the devil. Nor did faith, love, or hope desert them for a moment. 'God deserts no German!' has always been their motto. In war, none of them staid at home, except those too young and too weak—and they were not idle. The Turning institution, in those three years, offered up costly sacrifices; they lie upon the battle-fields, from the gates of Berlin even to the hostile capital."

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* These couples are alliterative in the original.—Trans.

It is difficult to select portions from Jahn's book for the purpose of describing him and his work, for all is characteristic; the book and author are cast in one mold.* Its work is, in the fullest sense of the words, what it purports to be—a German Turning system, in which a system of gymnastic exercises, complete within itself, is set forth with sound judgment, vivid style, and correct tact. It is not a wearisome, methodical, elementary joint-gymnastics for dolls; nor does it treat exclusively of bodily exercises, but discusses with great earnestness the moral atmosphere of the Turning organization.

The Turning system soon spread from Berlin throughout Northern Germany, and a large part of Southern Germany. Turning excursions had much influence in producing this result. Next to Berlin, Breslau had the largest number of Turners—some eight hundred. At that city, students, Catholic and Protestant seminary pupils, the pupils of four gymnasia, officers and professors, frequented the Turning-ground. At their head were Harnisch and Massmann; while Director Mönnich (of Hofwyl) and Wolfgang Menzel, then students, were among the assistant teachers. Singing flourished. On Wednesday and Saturday afternoons, after exercising from three to seven, the whole company returned singing to the city. The first half of the four hours, Turning exercises was there used in the drill, and the other half in the other exercises, especially games; an arrangement which is better than to begin with the more inspiriting portion of the exercises, and to end with the more serious and laborious drill.

Jahn's judicious distinction between the Turning school and Turning exercises is one that might well be introduced in other subjects.

For instance, in teaching singing, the first half of the lesson might be occupied in singing the scale, &c., and the other half with singing songs, &c., which he had learned before.

We very often hear much said, at the present day, of the opposition between an artificial organization and a human development. On this subject the mistaken opinion often prevails that the intelligent, efficient human will is, as a matter of course, counteracted by the course of historical development. But this is not the case; the question is only, Whether that will was in harmony with the development and tendency of the people, or not. If not, it is true that its only result is a vain endeavor to effect something. This was the case, for instance, when Brutus endeavored to free Rome by the assassination of Cæsar. But what one of God's commissioned messengers can do, when in harmony with the age, is shown by Luther's Reformation.

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* Thus I have unwillingly left out Jahn's observations about national festivals, Turning *schools, further exercises*, costume, &c.

It was one of the charges brought against the Turning system, that it was an affair artificially contrived, not a natural outgrowth. It is true that it grew quickly; fruits naturally ripen rapidly in hot weather. The period from 1810 to 1813, when Turning grew up, was certainly hot enough. Was the fire burning under the ashes all the time from 1806, which broke into a flame in 1813? Ever after the defeat of Jena, a deep grief was burning in the hearts of all German men and youth. The longing to free the beloved German fatherland, to renew its ancient glory, nourished among them a powerful mutual bond of the truest love. And the early Turners were among those included in this bond.

Their interested participation was nothing artificial, but merely the natural fruit of their earnest patriotism. This appears clearly enough from Jahn's account of the first beginning of the Turning system. It was this community of feeling and ideals which made the development of the art so rapid. There grew up, at the same time with it, a technical language, so appropriate that, instead of quickly going out of fashion, as artificial things do, it is at present, thirty-seven years after its appearance, entirely received and current.

Together with this first natural development of the Turning system, there came up also a reaction against many received and universal customs and manners. This necessarily aroused enemies, and the more because the Turners frequently overpassed the bounds of moderation, and made Turning identical with a warfare against all ancient errors. This was particularly the case after the war of freedom.

These errors did not escape the attention of the friends of the Turning system; and they endeavored to remedy them, whenever and however they could. This apppears, for instance, from the following extract from an address to the students, delivered at the Wartburg festival, by a man whose liberal views are universally known; namely, Oken. He said: "Beware of the delusion that upon you depends the existence, and continuance, and honor of Germany. Germany depends only upon herself as a whole. Each class of men is only one member of the body called State, and contributes to its support only so much as its circumstances permit. You are yet young, and have no other duty than so to conduct yourselves that you may grow up aright; to train yourselves; not to injure yourselves by foolish practices; to apply yourselves, without permitting your attention to be diverted to any thing else, to this purpose which lies straight before you. The state is at present not concerned with you; it has to do with you only in that you may hereafter become active members of it. You have no need of discussing what ought or ought not to happen in the state; it is only proper for you to consider how you shall yourselves in future act in it, and how you may worthily prepare yourselves to do so. In short, all that you do should be done only with reference to yourselves, to your life as students; and all else should be avoided, as foreign to your occupations and your life, in order that your setting out in life may not be ridiculous."

These words point out clearly the mistaken road by which the students afterward departed further and further from the right road. But they should not bear all the blame.

If a child has good and bad qualities, some people will look only at the former, and will foretell all manner of good of him; while others will see only the evil in him, and will prophesy an evil future for the child. But any one, who loves him truly, will consider how to cherish his good qualities, and to subdue his bad ones.

Such a child, with good qualities, but not without faults, was the Turning system. Passow, a man of honesty and benevolence, and of disinterested activity, looked almost altogether at its bright side, and in his "*Object of Turning*" (*Turnziel*) expressed hopes quite too great; it might almost be said that he spoke ill-luck to the child. Blame always follows excessive praise; praise must absolutely state the truth, must contain a just estimate of things.

My friend Steffens, on the other hand, saw only the dark side, the evils of the system; and he wrote his "*Caricatures*," (*Caricaturen*,) and his "*Object of Turning*," (*Turnziel*,) which was directed against Passow's "*Turnziel*." This talented man had lived all his life in the enthusiastic love of science and art; and this new system seemed to him to be cold and even inimical to every thing which he loved best. Jahn's rough, harsh, strong character was not agreeable to him; in the bitter censoriousness of many of the Turners, he naturally saw a hasty, presumptuous endeavor to improve the world; in their disrespect for many eminent men, unruly vulgarity; and in their German manners, only an affectation of them.

Thus there broke out in Breslau a violent contest between the friends and enemies of the Turners,* which called out many other publications besides Passow's and Steffens', only part of which would now have any historical interest. A work of permanent value on the subject is that of Captain von Schmeling, on Turning and the Landwehr; in which he showed how Turning was a valuable preparatory school for the training of the militia men.* Harnisch wrote "*Turning in its Universal Relations,*" (*Das Turnen in Seinen Allseitigen Verhaltnissen.*)

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* This contest, in which I also took part, Steffens has described in his Memoirs. Steffens exercised a most profound and kindly influence upon my life; for which I shall forever be grateful to him. He was my instructor and my brother-in-law; and for eight years we lived as faithful colleagues together, in the same house at Breslau. And now suddenly we came into opposition to each other. Our lasting, and mutual, and heartfelt love was such that it can not be described how much we both suffered from this truly tragic relation. My friends at Breslau even advised me to leave the place. When Steffens visited me, eighteen years afterward, at Erlangen, we there quietly reviewed the evil days at Breslau. This, our last

In a dialogue entitled "*Turning and the State,*"† I defended Jahn and the Turning system from the charge of being Jacobinical, and of hate toward France; and, in some others, against those who charged it with being anti-Christian. But this controversy was warmly carried on in other places besides Silesia. Arndt wrote powerfully in favor of Turning.‡ The physician Könen, in Berlin, wrote upon its medical importance; § not to mention many other publications.

During this controversy, the Prussian government showed great and deep interest in the Turning system. A plan had even been prepared for the establishment of Turning-grounds throughout the whole kingdom. But on the very day when this was to have been laid before the king for his approval the news of Sand's murder of Kotzebue reached Berlin, and the approval was withheld. This was the first fruit of that unhappy deed.

Many years passed before Turning was again freely practiced in Prussia. In Wurtemberg alone‖ it has been uninterruptedly maintained down to the present day. In Bavaria the present monarch, as soon as he came to the throne, took the system under his protection, and employed Massmann to have a Turning institution erected at Munich.

IV. TRAINING OF THE SENSES.

Rousseau, in "*Emile,*" discussed the education of the senses.¶

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earthly meeting, seemed to me to join immediately on to the early youthful intercourse of thirty-three years before; and I felt myself drawn to him by a love which had lasted through good and evil times, and which will outlive death, because it is stronger than death.

* At a later period, in 1843, Dr. Mönnich wrote "*Turning and Military Service,*" (*Das Turnen und der Kriegsdienst,*) in which he clearly stated the important relation between the two. W. Menzel, in his treatise, "*Bodily Training from the Point of View of National Economy,*" (*Die Körperübung aus dem Gesichtspunkt der Nationalökonomie,*) has earnestly recommended Turning, as a means of educating defenders of the fatherland.

† See my "*Miscellaneous Writings,*" (*Vermischte Schriften.*) First printed in the Silesian "*Provincial Gazette,*" (*Provinzialblättern.*)

‡ "*Spirit of the Age,*" (*Geist der Zeit.*) vol. 4, 1818. Reprinted with the title "*Turning; with an Appendix,*" (*Das Turnwesen nebst einem Anhange.*) By E. M. Arndt. Leipzig, 1842. A most valuable work.

§ "*Life and Turning, Turning and Life,*" (*Leben und Turnen, Turnen und Leben*) By von Könen. Berlin, 1817.

‖ A man of noble character and full of love for Germany and the German youth. Professor Klumpp, established the Stuttgart Turning Institution, and conducted it for many years. In 1842 he wrote his valuable treatise, "*Turning; a Movement for German National Development,*" (*Das Turnen; ein Deutsch-Nationales Entwicklungs-Moment.*)

¶ I have gone more into detail on this point in my chapter on Emile, which see.

According to him, all the senses should be cultivated; the eye, in estimating magnitudes and distances, and in drawing geometrical figures; the touch, in judging by means of feeling, which the blind learn to do remarkably; &c.

In this department of gymnastics, Guts Muths substantially followed Rousseau. He assigned to the senses a remarkable office; namely, to "awaken, from the slumber of non-existence, the child, at first asleep in its quiet bosom." The emptiness and impossibility of Locke's opinion, that man is at first a mere sheet of white paper, is made very clear and evident by Guts Muths' expression.

"The soul of the young citizen of the world," says Guts Muths, in another place, "yet lies in the profound slumber which comes with it out of its condition of non-existence." The mind becomes at first susceptible of powerful impressions on the feelings; and then becomes more and more awakened, and capable of more and more delicate impressions. "But, as the gradations of impressions on the senses, from the most violent to the most delicate of which we can conceive, are immeasurable, so is the refinement of our susceptibility to such impressions also possible to an immeasurable degree." All the life long, the mind is becoming constantly susceptible to fainter and fainter impressions; that is, more awake."

Guts Muths' idea of training the senses is thus the sharpening of them; as also appears from the examples of it which he gives. The boys are made to shut their eyes and feel of letters, figures, the devices on coins, &c. Seeing must be trained by cultivating the vision of small things and distant things. The children are "to follow Nature even to her minutest objects, even those scarcely visible to the eye." "The pupil," he says, "should observe not only the coarser parts of flowers, but his eye should pierce even their minutest portions. He should study the absorbent vessels, the structure of the skin, the bark and leaves of trees, many kinds of seeds; the reproductive organs of plants, the pollen, anthers, &c." He should be able to recognize a flower or a stone at thirty paces, and a tree at from a hundred to a thousand paces. His ear should be trained not only by music, but "he should observe the sound of laden and empty vehicles, of the squeaking of doors," &c. If the keenness of the senses, their susceptibility, were the measure of their improvement, those who are disordered in their nerves would surpass the most practiced senses of the healthy. They are annoyed by the least and most distant noise; and distinguish its exact nature only too well. If the pupils of Guts Muths could distinguish by the touch, with their eyes closed, between gold and silver coins, this was far outdone by a sick person, who became uneasy when any one, even without his knowledge, brought a silver spoon near him.

The American Indians, as is well known, whose mode of life is little better than that of animals, surpass most Europeans in the keenness of their senses; and thus, according to Rousseau and Guts Muths, the Caribs and Iroquois should be valued as our models. They might equally as well have proposed the eyes of a lynx, the nose of a hound, &c., as ideals. I have expressed my views already upon such doctrines as to bodily training, particularly that of the senses, in the following aphorisms, in which I have described an ideal of the cultivation of the senses.

The ancient legends clearly expressed the difference between mere animal strength of body and the human intellectual strength of body, by making their giants—huge, stupid, uncouth masses of flesh—be conquered by knights, smaller in body, but of keener intellects. Are then tigers models for springing, apes for climbing, and birds for flying? are they inaccessible ideals, to which the gymnast should look up with resignation and longing? We might like very well to fly, but not in the form of a crow or a stork; we would be angels. We would prefer to live imperfect, in a higher grade of existence, with the sense of capacity for development, than to fall back into a more complete but lower grade, behind us and below us. Cæsar despised being the first man in a small village, because he felt himself capable of being the first man in Rome. In like manner, the Turning system contemns a lower animal development, because a higher human one is accessible to it.

If the eye were only a corporeal mirror of the visible world, it would represent equally well or equally ill the most different things, according to the bodily health and strength, or sickness and weakness, of its condition. But it is an organ of intellectual susceptibility; of not only a bodily but also an intellectual union with things. And accordingly it is a well-grounded usage in language by which we say "to have keen eyes;" and "to have an eye for" particular things, such as plants, animals, &c. The former indicates bodily health and strength; the latter points to an original spiritual relation between the eye and certain things, trained by close study.

The same is more or less true of the other senses. The art of cultivating the senses has only to a very small extent any thing to do with what increases their corporeal strength—as, for instance, with medical rules for taking care of and strengthening the eyes.

It has much more to do with the cultivation of the intellectual susceptibility of each of the senses. Therefore it begins not with the arbitrary, one-sided cultivation of one sense, which tends to diminish the susceptibility of the others; and still less does it direct one sense arbitrarily to one single class of objects, as the eyes to plants or animals exclusively. For this would cripple the intellectual application of the senses to things of other kinds. But if the teacher has begun, as the universal microcosmic character of every well-organized child requires, with as general a cultivation of all his senses as is possible, and then observes a prominent and stronger activity in one sense, or an especial applicability of it to some one department of the visible world, as of the eye to minerals, &c., then only may he undertake the cultivation of that one sense or susceptibility, as a peculiar talent.

If now the intellectual senses are supplied by the external senses with an abundance of intuitions of all kinds, the impressions thus received gradually ripen, and desire to be brought to the light of day. Thus a little child speaks words which it has often heard its mother use, then sings what it has often heard sung, and tries to draw what it has often seen.

With every receptive organ nature has coupled a producing or representing one, or even more; in order that man may not be solitary in the midst of his inward wealth, but may communicate with others. He can, in many ways, represent a known object, whose picture is visible to his mind; he can describe it in writing, act it, &c.

The development of the susceptibility to impressions must naturally precede that of the power of representing. Hearing must precede speaking and singing; seeing, painting, &c. There exists a sympathy, as is well known, between the susceptible organs and the corresponding representing ones; of the organs of hearing with those of speech, of those of vision with the hand, &c. The use of the receiving organs seems to produce a secret, quiet growth of the representing ones, though these latter be not directly practiced.

In many trades, the apprentice is made to look on for a whole year, before putting his hand to the work. When his eye thus becomes intelligent, the hand follows it sympathetically. It is to be wished that the example might be followed in all the cultivation of the senses.

The teacher who tries to cultivate receptivity and power of representing together, who requires the pupil to furnish an expression immediately after the impression is made, mistakes Nature, who requires a quiet, undisturbed condition of the senses for their receptive office, and usually a slow development of the power of representing.

It is said of some of the North American Indians that the devel-[illegible]ment of their senses furnishes, for those who would combine them with bodily exercises, a model which never can be equaled. It is true that, according to the accounts of travelers, they surpass Europeans in keenness of sight, hearing, and smell. But are they therefore models of the cultivation of the senses?

This is confusing the idea of a human cultivation of the senses with an animal one; corporeal perfection of the senses with intellectual. The preceding observations have shown how different these are; examples will make the difference still more evident.

There are many men who have hearing so keen as to distinguish faint sounds at a very great distance, but who have no feeling at all for pure or beautiful music. There are most accurate piano-tuners and music-masters, who can distinguish every fault in any instrument amongst a full orchestra; but who, notwithstanding this fineness of ear, are so destitute of an intellectual ear for music as to prefer the most vulgar sort of it.

There are, again, others who can not tune any instrument accurately, and still less guide an orchestra; who are inspired by good music, and show distinct dislike to bad. Contrast with these keen and delicate hearers, Beethoven, who was almost deaf; and, again, there was another great harmonist, who said that perusing the score of a composition gave him more pleasure than the execution of the music, because the latter never equaled his ideal. He was thus capable of intellectual musical pleasure, even had he been completely deaf.

The case is similar with the eyes. Among my mineralogical pupils, I found some with very healthy bodily organs, who could perceive the smallest objects, and still were incapable of comprehending forms, of distinguishing like from unlike; in short, they had eyes, but did not see. On the other hand, there were others, whose eyes were weak, and who were as it were blind to small crystals, but who felt all the beauty of the larger ones, and closely followed all their varieties of color. So, I have known exceedingly short-sighted young men, who still had the greatest taste for pictures. And, again, there are many very keen-sighted persons, who gaze without emotion on the most magnificent pictures, sculptures, and churches.

The great distinction between the bodily and the intellectual senses might be illustrated by many other examples.

Surely these animal sharp eyes and ears of the Indian are not our models. It is the spiritually-illuminated eyes of a Raphæl, a van Eyck, an Erwin von Stein, the divinely-consecrated ears of Handel and Leo, which are the noblest specimens of the cultivation of the human senses, which are the divine models for men.

Regard was had in the schools to the cultivation of the senses quite a long time ago; or at least so it would appear. So-called "Intuitional Exercises" were introduced; Pestalozzi giving them an impulse, especially in his "*Book for Mothers.*" "The child," says Pestalozzi, "and indeed man universally, must be first made acquainted with what lies next him, before he can attend to the acquiring a knowledge of what is further off. The nearest visible object to the child is his own body, and this he should first of all observe, under the direction of the mother. She must, with him, follow the '*Book for Mothers,*' step by step, going through every division and subdivision of it, step by step, to the furthest details."

Thus, for instance, we find in that work:

"The first joint of the middle toe of the right foot. The middle joint of the middle toe of the right foot. The last joint of the middle toe of the right foot. The first joint of the middle toe of the left foot. The second joint of the middle toe of the left foot. The last joint of the middle toe of the left foot.

"My body has two limbs above and two below.

"My two upper limbs have two shoulders, two shoulder-joints, two upper-arms, two elbows, two elbow-joints, two fore-arms, two wrists, and two hands.

"Each of my two upper limbs has one shoulder, one shoulder-joint, one upper-arm, one elbow, one elbow-joint, one fore-arm, one wrist, and one hand.

"My two hands have two wrists, two palms, two thumbs, two fore-fingers, two middle fingers, two ring-fingers, and two little-fingers.

"Each of my two hands has one wrist, one palm, one thumb, one fore-finger, one middle-finger, one ring-finger, and one little-finger.

"My two palms have two balls of the thumbs; each of my two palms has one ball of the thumb."

"My two great toes have four joints, two front and two back; four knuckles, two front and two back; and four joint-lengths, two front and two back.

"Each of my two great toes has two joints, one front and one back; two knuckles, one front and one back; and two joint-lengths, one front and one back.

"The ten fingers of my two hands have twenty-eight joints, ten first, eight middle, and ten last; twenty-eight joint-lengths, ten first, eight middle, and ten last; and twenty-eight knuckles, ten first, eight middle, and two last.

"The five fingers of one hand," &c., &c.

It is evident how infinitely wearisome and unnatural such a mode *of observing* and naming over all the parts of the body must be, both to young and old. And it is an error to take his own body as the first object which comes under the notice of the child. Without some natural or artificial mirror, man would not see his face, and some other portions of his body, all his life long. A child is much more attracted by objects which stimulate his senses by color, brightness, smell, or taste. He would very much prefer cherries or apples to "the middle joint of the little toe of the right foot."

Several detected Pestalozzi's error. But, taking his principle as true, that it is necessary to begin with what is nearest at hand, they took subjects from the school-room; and the doors, windows, walls, seats, and desks were observed, described, and named, down to their smallest parts. I give an example.*

"The school-room and what it contains.

a. Enumeration of objects contained in and about the school-room.
  1. Without detailed definition.
  2. With detailed definition; as, immovable, movable, simple, compound, how compound? within reach; necessary; accidentally pertaining to the room.

b. Use of articles in and about the room.

c. Description of individual things, by their color, their form, their parts, the connection of their parts.

d. Materials of which the separate things and their parts are made."

The description of the windows alone fills two closely-printed pages. It says, among other things:

"The teacher should now have each of the separate parts of the window given in their order; as, the panes, the sash, the putty, the pulley, the button, the catch, the sash-bolt; lastly, the whole window, the window-frame, the molding. * * * Thus the whole window has been analyzed, and its parts considered. It only now remains to reconstruct it."

It would be much better, instead of all this wearisome, pedantic enumeration and hyper-pedantic reconstruction, to say, "The windows in the school-room are long and four-sided."

That such a methodical and wearisome method of instruction would throw active children either into despair or sleep, is clear. They had better jump about over the desks and seats in sport, than to describe them in this insufferably-affected way; they had better analyze perhaps not a whole window, but now and then a pane, in their play, and let the glazier "reconstruct" it, than to analyze and construct it in words.

It is a pity that something can not be found to use as a subject of instruction in the school besides what the boys naturally learn in their own experience. They know the windows, and seats, and desks, without any teaching; and will never call a desk a seat, or the contrary. For what purpose should he consider separately, and name, all the parts of the window; the pulley, the catch, the sash-bolt? What interest have they in these? Such details and names may be left to the glazier, the carpenter, and the locksmith. Every trade is a little separate people, with a peculiar language; but all these separate people understand each other, not in their trade-language, but in the language of their country. The trade-language belongs to the peculiar employment of each trade; each one has to do with many things which have no concern with the others, and can not concern them, unless they neglect their own business. And fellow-tradesmen discuss the matters of their trade, in their peculiar trade-language.

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* From Denzel's "*System of Education*," (Erziehungslehre,) 3, 32.

Justus Möser, who had an eminently sound understanding, says,* "My miller played me yesterday a comical trick. He came to my window and said that 'there must be four iron nuts on the standards and standard-pieces, opposite the crank; and all the frames, boxes, bolting-cloths, and springs wanted fixing; one of the iron post-belts will not work any longer with the shifting-piece, and ——.' He spoke German, my friend, and I understood well enough that he was talking about a windmill; but I am no windmill-builder, to understand the thousand details of a mill, and their names. But at that point the knave began to laugh, and said, with a queer gesture, that the pastor did the same thing on Sundays; that he spoke nothing but learned words, that took the very hearing and seeing away from the poor people; and that he would do better, he thought, to do as he (the miller) did, and furnish good meal to the parish, and keep his terms of art for architects."

The application to this sort of "intuitional instruction" is clear; and is doubly forcible because the teachers are not architects, and only affect a knowledge of these technical matters.

A remark of Herr Roth is very true, and very applicable to the present object. He says, "There are many things which, when rapidly discussed, on a proper occasion, are interesting to children; when, if studied by the hour, and methodically taught and reviewed, they would be most wearisome to them. To ask, cursorily, What is the difference between this table and that one? is very well; but to be staring at tables and desks, year in and year out, and describing them, is quite another thing."

The word "stare" is precisely appropriate; the exercise is a lifeless and forced one. The window and its parts are reflected in the [illegible]ring eyes of the stupified and wearied child; and his lifeless repetition of what the teacher says over to him corresponds with the lifeless reflection in his eyes.

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* "*Patriotic Fantasies*," (Patriotische Phantasieen,) 3, 243.

Close consideration will show that this sort of instruction is much more an exercise in language than of the senses, although one of the most unintellectual kind. The intuition in the case is only to give the teacher an opportunity to talk; and accordingly it makes little difference what the object exhibited is, whether a picture by Raphæl or a tavern-sign, the Strasburg cathedral or a wretched stable. Words can be made about any thing and every thing. The inquiry is scarcely made, Whether any knowledge is gained by the intuition; and not at all, Whether a permanent remembrance is insured of the thing shown. Very few seem to have an idea how quiet, undisturbed, and often-repeated the bodily intuition must be, in order to the obtaining of such a recollection, for the mental assimilation of the thing shown; and how the pupil's words should be only the product of this assimilation. No one seems to consider this process of real generation of words. A piece of gypsum is shown to a boy; he is made to repeat three times, "That is gypsum;" and then the specimen is put aside, and it is fancied that the boy has an actual knowledge of gypsum.

It will now be asked, Should intuitional exercises be quite omitted in school? I reply, Such wooden, methodical exercises on desks and seats may be omitted, as may all drilling merely for the sake of the drill; and, further, so may all drilling that is to give practice in nothing except the mere use of words.* The hunter, the painter, the stone-cutter, &c., do not train their eyes, nor does the musician his ear, for the sake of training it. Children, properly instructed in natural knowledge and in drawing, will be sure to use their eyes; and, as they penetrate further and further into their subject, they will, in the most natural manner, arrive at an increased accuracy of expression for the objects which they perceive by their senses.

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* Children are frequently found, especially in the common schools, who are as if dumb. How shall they be made to speak? I would recommend that they should be spoken to, not in a stiff school-fashion and school-tone, which would make them stupider than ever, but, as far as possible, in an entirely usual manner and tone, and on some common subject, which they understand, and on which questions may be put to them. Tables and desks may be used for this purpose, but not methodically analyzed.

XI. PROGRESS OF EDUCATIONAL DEVELOPMENT.

[Translated from Raumer's "*History of Pedagogy*," for the American Journal of Education.]

I. PEDAGOGY.

HISTORY has made us acquainted with the very different eminent educators of the last century. We have seen that each of them had an ideal which he sought to attain; a more or less clear conception of a normal man, who was to be produced from each child, by his method of education.

Bacon defined art, "Man, added to things." A man, that is, who prints upon things the impress of his mind. Does the art of education come under this definition? Certainly not; for we should have to consider the children to be educated as mere material, upon which the educator is to impress his ideal, as the stone-cutter does on a block of marble. But we might define the art of education, very generally, in analogy to Bacon's definition, thus: "Man added to man."

In order to a correct understanding of this last definition, we must see clearly how it is related to the various ideals or normal men of the educators. Did not each of them, either consciously or unconsciously, seek to determine an ideal of the human race; a generic ideal, including all individuals; and would he not educate every child according to his generic character and ideal?

God is the educator of the human race. Man is created by him, and for him; the beginning, progress, and perfection of humanity are his work. And if the teacher would have his work endure, he must look to God's system of "education of the human race." But it will not suffice for the educator to look to the generic character and the destiny of humanity only; he must regard another point. Every child is born with bodily and mental peculiarities, which sharply distinguish it from all other children, although they all have the generic character. No two children were ever entirely alike; each one is an entirely peculiar, personified organism of natural endowments; a completely individual and personified vocation. An invisible and mysterious master forms each of them according to a separate ideal: a master who does not, as human artists do, first fashion his work and then neglect it, as something entirely separate from himself; but who continues to work within man, even until his death, to the end that he may become like his prototype, and may fulfill his vocation.

God cares for each individual with the same paternal love as for the whole human race.

The vocation of the educator is to become a conscientious and obedient fellow-laborer with the divine Master; to endeavor to know and to help forward the perfection of that ideal for whose realization the master has already planted the seed, the *potentia*, in the child. I repeat: The educator must look to His work, if his own work is to stand; that is, not to the scarcely-comprehensible work of God upon the whole human race, but to his work within every individual child to be educated.

God formed man after his own image; but, after the fall, it is said that Adam "begat a son in his own likeness, after his image;" not after the divine; flesh born of flesh, a human child, perverted from God. During all the thousands of years which have passed since Adam, only one child has lived who was sprung immediately from on high, and who, of his own power, grew in knowledge, in stature, and in favor with God and man; and who needed no education, but only care. All other men are invariably sinners from their youth up; and in all the image of God is removed away.

The purpose of all education is, a restoration of the image of God, with which the new birth begins. "This is the work of the regenerating, creating power of God, (ἐκ θεοῦ γεννηθῆναι;) and, although a mystery both in its origin and in its aims, (John iii., 8,) works upon the earth in a visible and unmistakable manner—a new creation, a new man."* The mystery of its origin is the mystery of the sacrament of baptism, "the bath of regeneration." After that period there are two powers within the child, who commence the strife between the spirit and the flesh, the old and the new man; a strife of regeneration, which endures even to the end of life.† Parents and teachers are the auxiliaries of the child in this contest. The problem of Christian pedagogy is, lovingly and wisely to watch, pray, and labor, that in the child the new man shall grow and be strengthened, and that the old man shall die.

Thus it is that we understand the term "man added to man."

But the church theory of baptism has been attacked; and, in our own times, anabaptist views have become widely disseminated. Many see, in baptism, only a symbolical act, by which the baptized is preliminarily received among the members of the Christian church, without becoming one truly and actively, because he is yet inexperienced in faith. It is by confirmation that he becomes consciously an acting member of the church. To admit a grace of baptism, it is said, is to admit a magical operation of the sacraments.

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* Harless, "*Ethics*," 77.

† Larger Catechism. "The power and work of baptism are: the mortification of the old Adam, and afterward the resurrection of the new man. Which two are in progress throughout all the life; insomuch that the Christian life is nothing else than a daily baptism, begun once, but always in progress."

And J. Gerhard says, "Infants, in baptism, receive the first fruits of the spirit and the faith."

On this subject I refer to the dogmatic theologians, especially to Luther; and shall here only observe as follows.

The difference respecting baptismal grace seems to proceed chiefly from the opinion that, if grace passes from God to man, the latter can not be entirely passive; but that God can not confer a spiritual gift, unless the recipient shall receive it with intelligent consciousness.

Let us turn for a moment from spiritual to natural endowments. Is it not a proverb that "Poets are born?" Must it not be confessed that, in the new-born infant Shakspeare, the *potentia*, the seed, of the greatest creative talents the world ever saw was slumbering, quiet and unobserved, just as there was once slumbering, in a small acorn, the *potentia* of the mighty oak of a thousand years, which now stands before us? And might we not reply to the masters in Israel, who doubt the existence of this *potentia*, "Ye do err, not knowing the power of God?" For to whom belongs the glory? Was the poet the intentional production of his parents? And could not God, who in so profoundly-mysterious and incomprehensible a manner blessed their union, confer an equally wonderful power upon the sacrament which he ordained?*

Although I refer to dogmatic writers for the details of this theory, yet I may here observe that it is of the utmost importance to theologians. If Christian parents believe in the actual beginning of a new and sanctified life in their child, if they see in him a child of God, in whom the Holy Ghost works, they will educate him as a sanctified child of God, will teach him early to pray, and will make him acquainted with God's Word. But if they do not believe that the seed of a new life is in the child, if they consider him a "natural man, who receives nothing from the spirit of God," and as incapable of faith, they will proceed according to whether they are Christians or not. If not, they will bring up their child as a natural child of Rousseau's kind; a heathen child, in a heathen manner. But if they are, as is the case with baptists and anabaptists, they will still see in the child a heathen, but one who can early be brought to Christianity, by the Word, and by awakening addresses. In this manner they think of themselves to bring about the new birth, instead of considering, as do the believers in the church's theory, that the care of the seed of a new life, planted in the child by baptism, is the office of education.

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* The unworthy manner in which the sacrament is often administered causes many to err. But if the king should send us a magnificent present by a foolish servant, incompetent to este it, would that diminish the value of the present?

II. PELAGIAN PEDAGOGY.

I have mentioned Rousseau. We have learned to consider him the true representative of that system of pedagogy which I shall, for brevity, call Pelagian—or even hyper-Pelagian. "Every thing is good," begins "*Emile*," "as it comes from the hands of the Creator; every thing degenerates, in the hands of men." These words he uses, not of Adam before the fall, but of every new-born son of Adam, born of sinful seed. And he says, in another place, "The fundamental principle of all morals, upon which I have proceeded in all my writings, and have developed in *Emile* as clearly as I could, is, that man is by nature good, a lover of justice and order; that no inborn perverseness exists in the human heart, and that the first impulses of nature are always right."

Thus he distinctly denies original sin, and would disprove the words, "That which is born of the flesh is flesh; flesh and blood can not inherit the kingdom of heaven." While the Christian teacher seeks for reformation, for the destruction of the old man, and the quickening and growth of the new, Rousseau recognizes only one, the old man, whom he himself calls the "natural man." Him he would develop and watch over; and would dress him out for baptism with borrowed Christian adornments, although he ignores Christianity, and congratulates himself on the fact that his child of nature belongs to no religion and no church.

We have seen to what absurd conclusions Rousseau was pushed by this unchristian premiss; to what unnatural views, by his constant reference to nature; to what sophistries, by his attempt to show that all wickedness is first implanted in the child, originally as pure as an angel, by adult persons. Luther's sound and healthy pedagogy is precisely the opposite of Rousseau's. The comparison of the two must convince any one that the division of educators into Pelagian and anti-Pelagian is a fundamental one, and of the greatest practical importance.

III. RE-ESTABLISHMENT OF THE IMAGE OF GOD. HUMAN TRAINING.

Christ said, "Be ye perfect, even as your Father in heaven is perfect." Thus he places before us the very highest ideal; and reminds us of that lost paradise where man retained the uninjured image of his prototype. And thus we take courage to "press toward the mark for the prize of the high calling of God in Christ Jesus."

Christian training seeks the re-establishment of the image of God, by raising up and faithfully guarding the new man, and by the death of the old. The process of the re-establishment is one both of building up and of destroying; positive and negative; and this in relation to

a. Holiness and love.
b. Wisdom.
c. Power and creative energy.

IV. EVIL TRAINING.

While a right training, such as is pleasing to God, seeks such a re-establishment of the image of God in man, that the new and heavenly man shall become a power within him, and the old man shall die, there is still, on the other hand, a false and devilish training,[*] a miseducation, a caricature of education, which is not satisfied with our inborn sins, but which also proceeds to destroy the young by naturalizing bad instincts in them, or even by a methodical course of corruption. The ideal objects of this miseducation are to destroy the seed of grace in the new man, in the child, and, on the other hand, to encourage and protect the old man, the man of sin, until he shall rule, alone and uncontrolled.

Fearful evils grow out of such a state of things. All manner of warnings away from this destructive path should be given; and to this end we should give diligent attention to discipline in the Lord, to delay, to education, and to miseducation.

V. (a.) RE-ESTABLISHMENT OF HOLINESS AND LOVE. CHRISTIAN ETHICAL TRAINING.

Man fell, from pride; because he would be not merely like his Maker, but equal to him, instead of obeying him in childlike love. In the place of love of God, there thenceforth prevailed in him a delusive self-conceit and self-love; and, in order that he might not thus go entirely to ruin, God reserved for himself a place in him, by a conscience, powerfully corroborated by the death of the wicked. This was man's dowry, when he was driven out of Paradise; his protecting angel, powerful against his original sinfulness, who ever, against his own will, kept him humble in the fear of God, which is the beginning of wisdom; and was his inward taskmaster, to drive him to Christ. Afterward, the law was put over him, as a severer taskmaster; to awaken his sleeping conscience, and to direct him when going astray.[†]

In the fullness of time appeared Christ, to reconcile fallen man to

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[*] "We are justly given over to that ancient wicked one, the master of death, because he has persuaded our will into the similitude of his will, which is not established in thy truth."—Augustine's "*Confessions*," vii., 21.

[†] *Romans*, ii., 14—17.

God, and to re-establish the kingdom of childlike obedience and love.

The explanation of each of the ten commandments, in the smaller Lutheran catechism, begins with the words, "We must fear and love God." This is to awaken the conscience of the child, and to impress upon him the fear of God; but love is joined with fear. In these two words are contained the law and the gospel, the Old and New Testament presentations of the commandments. Conscience and the law continually remind sinful man of God's holiness and justice, and drive him to repentance. But the most anguished conscience will find peace in looking to the forgiving love of Christ; in faith in him who beareth the sins of the world.

The Holy Scriptures repeatedly point us to the holiness, justice, and love of God as our model. "Be ye holy, saith the Lord, as I am holy." "Be merciful, as your Father in heaven is merciful." "Beloved, if God so loved us, we ought also to love one another." But Christ includes all in the words "Be ye perfect, even as your Father in heaven is perfect."

Thus, we repeat, He admonishes men to return to God; to re-establish their original likeness to him; and He, who is "the brightness of his Father's glory, and the express image of his person," the beginner of our faith, as he will be the finisher of it, will not neglect the work of his hands. The hour of his death was the hour of the birth of a new world, victorious over sin and death, loving and well-pleasing to God. After His return to his Father, he sent us the Holy Ghost, to complete the work which he had begun in the hearts of men, and to extend the kingdom of God over the whole earth. He, the educator of the human race, is the master of all teachers; he must guide them in all truth, must bless their labors, and teach them to pray. Only under his guidance can a Christian ethical training prosper, the image of God be renewed in the child, holiness and love planted in his heart, and wickedness and unlovingness rooted out.

VI. ANTI-CHRISTIAN AND IMMORAL MISEDUCATION.

But who can enumerate the manifold offences of parents and teachers, against the rules of a Christian ethical training?

The conscience of children is laid asleep instead of being awakened, and sins are treated as pardonable weaknesses.

In the place of a godly conscience is even planted a lying spirit; a devil's voice is placed in the hearts of the children. Thus, there is held up before them, as the highest object of attainment, not acceptance with God, but the false and deceiving glitter of honor among men; notwithstanding the warning voice of the Lord, "How can ye believe, which receive honor one of another, and seek not the honor which cometh from God only?" How often must we hear it said, What will people say? Foolish parents refer their children to "people" as the highest tribunal; to the customs of the multitude who are walking on the broad road which leadeth to destruction; instead of early impressing upon them the bold expression of the apostle, "For what have I to do to judge them also that are without?"

A similar practice is that of teaching children to put on a hypocritical behavior before people, to assume rootless and lifeless pharisaic virtues, such as will pass current with those who do not look for any ethical basis of action, and with whom the show will pass for the substance.

If we follow the life of the fleshly minded, back to their youth, we shall very often discover many serious faults in their parents. The first seeds of the dominion of the flesh in them were often planted either by the unjustifiable neglect of their parents or by actual positive misleading. Who can describe the influence upon a child's soul of vile loose dances, of vulgar plays, of reading bad romances? How often have cards and loto during childhood originated the subsequent fury for gaming; and how often have deluded parents taught these dangerous games to their children!

Many things might be said of the bad examples set before children by the thoughtless and even wicked remarks which they hear grown persons make.* But enough has been said to explain the meaning of the term "anti-Christian, immoral miseducation."

VII. RE-ESTABLISHMENT OF WISDOM. INTELLECTUAL TRAINING. WRONG WAYS.

With sin is closely allied error; deviation from true ways. Adam's naming of the beasts in Paradise indicates the profound and godlike power of mental penetration which he possessed before the fall. For it is said that, as the man named them, "that was the name thereof." This divine approbation of Adam's nomenclature showed that the names were competent to express the natures of the various animals; and would certainly not have been bestowed upon the names which modern science has arbitrarily invented and bestowed on them.

But the restoration of this primitive innocent wisdom is an object to be sought after. It is the object of all intellectual training; and is intended to destroy error, and lead to the real truth; just as it is the office of Christian ethical training to destroy sin, and to lead to virtue by faith.

As conscience may be considered a correlative of original sin, so the reason may be considered a correlative of original error; as an intellectual conscience; an organ of intellectual self-knowledge.

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* "The utmost reverence is due to the young; if you are meditating any thing vile, disregard not their tender age." How many Christians does Juvenal put to shame!

Defenders of Christianity have said much against the reason; and quite as much might be said against the conscience. We have seen that in men, instead of the true conscience, the voice of God, there may enter a false conscience, the voice of the devil, betraying into all evil. In like manner the reason may become false, especially through pride. When not thus distorted, it represents God's truth in man, as the conscience does God's holiness and justice.

"The reason," says Hamann, "is holy, right, and good; but it can produce nothing except a conviction of the universality of sinful ignorance." Thus, the right reason will make us humble; and points sinful, ignorant man to a holy and all-wise God. Through an unholy, wrong, and wicked reason, on the contrary, comes, on one hand, the boundless presumptuousness of pretending to know absolutely, to recognize truth as God does; or, on the other hand, a doubt of all recognition of truth, a proud and cold acataleptic condition. The good and holy reason of a Christian applies itself, under the Holy Ghost, to that learning which guides into all truth. In this school—the school of humility—it learns to know its intellectual limits; and the boundaries between the regions of faith and of sight. It recognizes the fact that, since the fall, man has been in the "region of dissimilitude," and distinguishes between that which is given him to know and that which is the subject of faith; those incomprehensible mysteries whose essence God alone understands, because he is that essence.

Absolute truth, as it is in God, is just as inaccessible to man, as long as he is imprisoned within his earthly tabernacle, as is absolute holiness. He who asserts that he possesses the absolute truth must also mean that he is absolutely and completely holy; and armed with divine power.* "Knowledge, and power, and holiness are identical."

A strife for wisdom, analogous with the strife for holiness, lasts every man his lifetime, in the pursuit after truth.

There is also an intellectual miseducation, analogous to the ethical one, in men perverted and turned away from God. Puffed up with a conceit of wisdom, they are deceived as to the limits of it. They also mistake the giver of all knowledge; do not ask him for wisdom; do not thank him for the intellect which he has given them; for they think all knowledge the fruit of the powers of their own minds. But their labor, which is not performed in God, which seeks not the glory of God, but of themselves, is a servile labor, without a blessing and without peace. This is unfortunately the character of the usual scientific labors of the present day; and this perverted belief in so many learned men has a most powerful and most evil influence on the instruction of the young. Vanity impels the learned men; they impel the young by vanity, and lead them to make a show before people with what they have learned. Thus it happens that all pleasure in what they learn, and the mode of learning it, is entirely driven away, and replaced by an idle pleasure in the praise of men; and all which is cursed by such vanity must of necessity wither away. While both old and young, teachers and scholars, are, like Narcissus, foolishly burying themselves in a vain self-admiration and self-respect, still others fall into the same snare, by devoting to ungodly scientific labors their whole lives, words, and actions. Students of nature, wholly absorbed in the creature, ask not after the Creator; but live in a modern heathenism; and philologists, neglecting every thing that is Christian, worship false gods with the ancient classics. Such errors as these have a destructive influence on youth.

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* Not that every truth is merely apparent, and is uncertain; but that every truth contains something entirely comprehensible, and at the same time something entirely incomprehensible. This is true even of the profoundest essence of mathematical truth—of its ultimate base. See the chapter entitled "*Mysteriously Revealed.*"

I have elsewhere discussed various other errors, both of teachers and of the lawgivers of pedagogy.

VIII. RESTORATION OF THE HUMAN POWERS.

Man is to "have dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over all the earth, and over every creeping thing that creepeth upon the earth." This dominion was that of the image of God, in the name of God; peacefully recognized by all creatures. Thus the painters place Adam and Eve in Paradise, at peace with the lions and tigers around them. But when man became disobedient to God, the creatures became disobedient to him; for they had reverenced him only as the viceroy of God.

There, however, remained to man a species of dominion, even after the fall. "And the fear of you," said God to Noah, "and the dread of you shall be upon every beast of the earth, and upon every fowl of the air, upon all that moveth upon the earth, and upon all the fishes of the sea; into your hand are they delivered."

But this was not the original peaceful dominion; it was a dominion of fear and terror. And a commandment of fear came also from the Lord. As he had before the fall given man all manner of herbs, and the fruit of trees, for food, so he said, after the flood, "Every moving thing that liveth shall be meat for you; even as the green herb have I given you all things."

Therefore, even to the present time, the dominion of fallen man is *such over* the beasts, that they fear him, as rebels do the power of their ruler; and his weapons, still more than his divine image. But the prophecies in Isaiah of a future time, when a young child shall lead a lion and a lamb together, and when the sucking-child shall play upon the cockatrice's den, point to a restoration of this human dominion over the beasts. Daniel in the lions' den, and Paul, whom, according to the Word of the Lord, the viper did not injure, are the forerunners of that dominion which man shall again possess, not by the power of his weapons, but by faith.

The passage of the Israelites through Jordan and through the Red Sea, the powerful prayers of Elisha for and against the rain, Christ's stilling of the storm by the words "Peace; be still," and his walking upon the sea—all these point to a future dominion of man over inorganic nature also; a moral dominion, in the power of faith, in the power of God.

The various healings of the sick point to a similar future power.

But, it may be said, all that we are saying relative to the restoration of human powers is simply arguing from a miraculous past to a miraculous future.

It is true that at present we have only the shadow of that past and future time; and it is only with that shadow that we have at present to do.

Thus thought the most judicious of philosophers, Bacon, when he said, "Knowledge and power are the same" (*Scientia et potentia hominis coincidunt in idem.*) In proportion as man knows nature, he rules it. Bacon every where requires, not merely a theoretical knowledge, but a practical, efficient power. With all theoretical knowledge of nature there goes also a practical art; an art of operating upon nature, mostly based upon scientific knowledge.

Thus we do in fact rule the creation, not by the mental magic of words, strengthened by faith; but we make it serviceable to us by searching into the nature and powers of different creatures, bringing them under our power, and setting one to work upon another.

We tame and improve animals, we improve plants, guide the lightning, constrain steam to serve us, fly by the aid of gas, cure by all kinds of medicine, and light is made to serve us in the place of artists.

In this realm man rules, and he seeks in all ways to extend his dominion. The present time boasts especially of this extension. But this is no gain, if all nobility of feeling, all sense for higher things, are to be choked and destroyed; if all intellectual power is to become slavishly subservient to the earthly; and if man, utterly blinded with his convulsive efforts, is to seek material objects only.

We are bound to strive against such ungodly and unworthy impulses. We may not be indifferent in whose name it is that we work; whether it is Moses who acts, or Jannes and Jambres. Both theoretical and practical natural science must be taught, in a right and pious manner; both must be sanctified, as well in principle as in purpose.

IX. THE CREATIVE POWER OF MAN.

When man, as the image of God, was placed as his representative in the dominion over the creatures, he was also himself shaped in the image of God.

It would seem that the Creator desired that his creatures should themselves partake of his creative power; for he conferred upon plants, beasts, and men the power of reproducing their kind, to all time; instead of himself forming one generation after another.

But to man he granted more; he granted him the gift of various creative powers, and an intelligent will for the free development of those powers. The bees build dodecahedric cells, not by a free and improvable art, but by instinct; they *must* make dodecahedra, just as the inorganic elements of a garnet crystal *must* gather into the same shape.

Of what kind, it might be asked, were these gifts in Adam, before the fall? Only one is mentioned in Genesis, that of speech. It was already observed that the Creator approved of the names which Adam gave to the beasts; and that these must therefore have expressed the real character of the beasts. In these names, humanly given, God's creation was mirrored, they were actual names; really *substantives;* arising out of the appearance of the creatures themselves. We, fallen men of the present day, can not make such names.*

We may consider this giving of the names by Adam as the first entirely complete expression of human speech; a completeness which later men have sought to equal in many ways, in prose and in poetry.

The very name of poet reminds us that he is an image of his Creator—a "maker." The greatest of poets has, in the Midsummer Night's Dream, thus described the poet:—

> "The poet's eye, in a fine frenzy rolling,
> Doth glance from heaven to earth, from earth to heaven;
> And as imagination bodies forth
> The forms of things unknown, the poet's pen
> Turns them to shapes, and gives to airy nothing
> A local habitation and a name."

Are not the forms born from Shakspeare's wondrously teeming fancy—Macbeth, Hotspur, Desdemona, Shylock—indeed most of the persons in his dramas—so entirely individualized, independent men, that we might almost be tempted to assert that they have a more individual existence than do numberless actual human beings?[*]

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* We make great efforts to describe in as perfect a way as possible, and search out many words, mostly adjectives, so as to stick together a sort of mosaic picture in words, as perfect and similar as may be, of minerals, &c.

Thus the poet creatively, by his words, reveals a rich interior world. And his poems even stimulate sensitive hearers to become poets themselves; to repeat his creative act.

The historian and the orator are related to the poet.

But above all the human arts of language, and different from them, stands in holy solitude the revealed Word of God, which through his efficient power causes the regeneration of the world. From its fullness, preachers, and singers of divine songs, draw their power over the hearts of their hearers.[†] In this holy realm, man finds a foretaste of the powers of the future world; of his return into his father's house.

As in the arts of language, so does the creative power of man express itself in fine arts. Raphael does not only give us true representations of localities and of men; he paints a new earth, a new heaven, and glorified saints like angels.

Thus we can trace this creative power in every art; in the sculptor, the architect, the musician; sometimes imitating, and sometimes idealizing, in a divine aspiration.

Every artistic gift implanted by God in the soul of a child must be faithfully cherished and trained. To this end the first requisite is, that his senses shall be trained: his eye to a true, clear, vivid apprehension of the visible world; his ear to true and keen hearing, &c. And with this development of the susceptibilities must sooner or later be connected that of the power of representation: of speaking, singing, writing, painting, &c.; that is, the development of the creating power. But, above all, his feelings must be purified and sanctified, that he may have no pleasure in impure artistic labors, in external beauty without internal moral goodness.

I can not utter a sufficiently emphatic warning against the usual abuses of these powers. The apostle James refers to the abuse of speech. "The tongue," he says, (and we may add, the pen and the press,) "is an unruly evil. Therewith bless we God, even the Father; and therewith curse we men, which are made after the similitude of God. * * * Doth a fountain send forth at the same place sweet water and bitter?" And it is said, in earnest warning, "For by thy words thou shalt be justified, and by thy words thou shalt be condemned."

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[*] God did not make men and then depart, but they are of him and in him. Remain in him who made you. It is upon this truth that the real energy and actual existence of a human being depend.

[†] "The Word, added to the element, makes it a sacrament."

These warnings are applicable both to speakers and writers; and to hearers and readers too.

The fine arts, especially, have variously and deeply sinned against purity; let us guard our children against impure pictures. Unholy and delusive passions characterize the modern music; let us return to the chaste and pure music of the ancient masters.

I pray the reader to receive with indulgence this attempt to base pedagogy upon principles; to set forth, though only in outline, its purpose and object. It is an endeavor to show that all human training must seek the restoration of the image of God; and that a Christian, ethical, intellectual, and artistic training, in particular, should contemplate the renewal of our similarity to God in holiness, wisdom, power, and creative energy. Such a training leads to holiness, which has the promise of this world and the next.

XII. SCHOOL DISCIPLINE.

PLAN OF INSTRUCTION; PLAN OF LABOR.

Translated from Deisterweg's "*Manual for Teachers*," for the Am. Journal of Education.]

SECTION I.—SCHOOL DISCIPLINE.

CAN we hope for a conclusive discussion of school discipline?

Many teachers have occupied themselves on the subject, and there is no end to their discussion on it. We have not thought proper to devote to it an extended chapter, for the very plain reason that we do not consider it a separate, independent department; but as one and the same with instruction. In our opinion, it coincides with didactics; and, if not identical with it, is still a consequence of it. The true didacticist is also a disciplinarist; he who holds clear views as to instruction, does the same as to discipline; he who instructs well, disciplines well; subjects of instruction are, according to the ancient but often forgotten opinion, "disciplines."

These views—which it would be easy to extend—were not received so long as the old dogmatic way of teaching was recognized as the sole duty of the teacher. Then, a man might know much, speak well, and "teach" well, and yet know nothing of maintaining discipline. Such (to mention a name whose reputation will not be injured by it) was Schleiermacher, at the Gray-friars' Gymnasium, at Berlin; and such were many other learned men, even down to the present day. But since we have come to include in the idea of teaching something more than, and indeed something entirely different from, the mere communication of knowledge—namely, to stimulate, to develop, to lead into a condition of independent activity; in a word, to instruct, according to the rational modern meaning of the term—since this has been the case, there have been no longer good teachers who have not understood how to discipline their schools. As far as his capacity and power of instruction go, just so far do his educating power and efficiency go. Whoever agrees with the previous positions in this book will agree with this assertion.* The schoolmaster of the present day does nothing except to teach, from one day's end to another. He is entirely a teacher, and is therefore with propriety called by that name and by no other. It is not an arbitrarily invented name, which may be exchanged for a better. The ancient "schoolmaster" has nowadays advanced to the grade of "teacher." As teacher, he calls into activity the observation, industry, love of learning, capacity for it, power of language, capacity for independent action, and self-control of his pupil; all his faculties, not merely those of acquiring knowledge, but the feelings and the character. That is, he directs, corrects, and disciplines him, outwardly and inwardly. The pupil attends school. Here, order, propriety, morality, good manners, obedience, regularity in coming, going, standing, and sitting, and in preparing and delivering his work, love of his occupation, his teacher, and his school, and also truthfulness and credibility, appear as the consequences of the influence of the living, educating principle of the school; that is, of a teacher whose intellect and will are active, vivid, and strong; who, just as Schiller composed, philosophized, and labored as a character, does every thing, inspires every thing with character. The whole matter of disciplinary means therefore concentrates itself in this requirement from the teacher. Teach with didactical—and consequently also with disciplinary—power and skill. The principle of teaching is the principle of school education.*

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* Compare this: "Discipline is not the art of rewarding and punishing, of making pupils speak and be silent; it is the art of making them perform, in the most appropriate, easy, and useful manner, all the duties of the school." The definition of "school discipline," by the Conference Society of Capellan, (see above.) is evidently too broad. "The elementary school ought, by the spirit ruling within it, and by its instruction, so to operate upon the children that they shall receive a preparation, adapted to their ages and capacities, for temporal and eternal life."

Thus it appears that the teacher, while bestowing attention upon his system of instruction, must also pay attention to whatever outside matters relate to it, must adjust his views and practice as to them, and must cause his scholars to conform to them. And in like manner it is self-evident that, where several teachers are laboring together in one school, there must be an agreement upon subjects of this kind, that there may be a harmony of action among them, and one may not pull down what another builds up. The right spirit of instruction will lead the teacher to right action. Shall we go into particulars under this subject? Their name is legion—but we will refer to a few.

1. Strict enforcement of regularity in teaching school, neither too soon nor too late, but before the stroke of the bell. The teacher therefore to be in the school before it is struck. This is indispensable. Any one coming late to remain standing during the first hour, and to go to the foot of the class.

2. Pupils to be quiet in their places, and to be quiet while preparing their lessons.

3. Exercises to commence at the stroke of the bell, with singing or prayer, or both, but briefly. One stanza of a hymn is enough. Unprogressives have all or half of a hymn sung. But the object of singing is to be a stimulus for work.

4. Position of the teacher before the class, at his post; not to be wandering about. To see all, to address all, to question all, to stimulate all, as one man.

5. Indication of readiness to answer by lifting the forefinger or right hand, not the arm: one to be selected to answer.

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* Curtmann gives, as the principal requisites of a teacher as disciplinarian, watchfulness, *ve of order*, consistency, and fairness.

6. Such one to stand up and speak in a clear, distinct, definite, strong manner. No error, stammering, slowness, half-answer, or slothful answers to be allowed. No telling—that school-pest! Why?

7. For repetition, the pupils to leave their places; not otherwise. The teacher who always needs this means of stimulating the attention is fond of ease, or a feeble teacher.

8. Recognition of every endeavor after success, according to the amount of effort, even if the results are small. Such recognition encourages; while blame, especially if undeserved, is prostrating.

9. No moralizing. Give brief and clear orders, laconic praise[*] and blame. The laconic teacher is the best.

10. Patience with the feeble, unweariedness with those who try, peremptoriness with those who do not do all they can.

11. The pupil's eye to follow his teacher as a planet the sun, or as a satellite its planet. This must happen of itself, or else it is a made-up action, and valueless.[†] Erect but not stiff carriage of the body, the feet to be kept still, the hands off the table.

12. Pupils to leave school quietly and orderly, before the teacher, with a silent salute to him; and to go quietly home.

Will this dozen of hints be sufficient? Must we instruct the teacher how the scholars should behave when a stranger, or the pastor, or a school-inspector, &c., visits the school? or how to meet the complaints of parents? or how to punish, with what, whether with a stick, and a thousand other questions? Where should we end? Those desiring information on those points, should study the books already named, on school discipline, especially that of Dobschall. As seeking the kingdom of God is the first thing, and to be replaced by nothing else whatever, and guides into all truth, so does a right spirit in teaching lead to right action. This, accordingly, is what the teacher should endeavor after. Without it, all else is wood, hay, stubble, which the fire will consume. With it, it is impossible to go wrong, although "man errs so long as he struggles" it is true; but he will not, on the whole, ever fail of the right way. Experience purifies and directs. Not all things are for all. "Though two do the same thing, it is not the same;" and this is true both of delinquent scholars and of disciplinary teachers. "No one thing is suited to all." What one man applies with success, will fail in the hands of another. There is no receipt-book for the thousand and thousand cases which arise in discipline. "What the understanding of no wise man sees, childlike feeling will practice in simplicity." These teachers are born rich. Others learn from them, by their example, by observing them. "Demonstration goes beyond study." The best work is done by a firm character, a will directed toward good. To this end have we "Moses and the prophets." And in this also all depends upon the spirit of the work. A right spirit leads to right thoughts; as is the former so are the latter.

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[*] Praise, that is the approbation of some respected person, (*Laudari a viro laudato.*) elevates the soul, and encourages it to noble sentiments. See Jean Paul Richter's "*Life*," iii, 13: "Even the greatest minds, however much consciousness of power and self-reliance they may have, still sometimes, even from their youth up, feel the need of an encouraging recognition of their talents, and of the successful application of them. The estimate of others is indispensable to a man's correct appreciation of his own worth." Every teacher who *educates* should continually remember this. The Hamburger, Gurlitt, is a model.

[†] "A made-up educated man is the most foolish creature under the sun."—(Bettina.)

Of means of punishment* we prefer to say nothing at all. They are mostly useless and unnecessary; where the instruction is of the right character, *i. e.*, adapted to nature and to the subject. The pupil should study in the school, and with pleasure. Where this is the case, there will be few or no improprieties; where it is not, the teacher will be constantly obliged to make rules and inflict punishments, but without the result desired. For the design of punishment is to do away with punishment. But both punishment and delinquency are avoided by love of the pupil's work. And this love of the work† must be produced by the work itself. A consciousness of constantly growing powers continually stimulates the desire of their development. The principle of instruction is the principle of education; the method of instruction is the method of education.‡ Where this is not so, but where the two do not coincide, and where, thus, the instruction is not in and of itself educating, but only instructs—communicates knowledge—there there is no real education. Those not clear on this point should study the work—which I can not sufficiently recommend—of Weiss, "*Experiences and Counsels,*" (*Erfahrungen und Rathschläge,*) 2d vol. The result of his excellent discussion of the subject is concentrated in the following statement. "Instruction, in order to develop into independent action and fitness for actual life the whole mental powers of the student, as a being of senses and reasoning powers, should first of all endeavor to stimulate and bring into full activity the feelings, as the central point of, and means of operating on, all the mental faculties and their results. Instruction, in order to accomplish this result, should use its material only as a stimulus, should proceed from actual observation of objects of intuition, and should from this develop within the pupil's mind the idea of those objects. By this method only can the inner nature be entirely reached, a true interest in the subject of study excited, and the understanding and will (head and heart) alike cultivated, and consequently the individual educated by means of education."§

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* The right of punishing minors, and of applying necessary constraint to them, needs no establishment. The means used, however, should be of such a kind that it may be certain that "the pupil, if he were to express a reasonable conviction on the subject, would approve them."—Rotteck, "*Public Science,*" I., p. 140.

† Young teachers are most concerned about discipline, because they do not understand instruction. And most very learned men, not understanding the latter, do not understand the former. If they should acquire a knowledge of methods, they would learn discipline at the same time. This is exemplified at the teachers' seminaries. Where their pupils are made skillful in instruction, they prosper in all things.

‡ Pleasure—enjoyment—sympathy—in realities, is the only real existence, and the only means of making realities known. All else is vain, and wasted time.—(Goethe.)

§ I will add to the above an extract from the work of a powerful, thoughtful, and experienced woman—(Tinette Hornberg, "*Thoughts on Education and Instruction, especially of the Female Sex.*" (*Gedanken über Erziehung und Unterricht, besonders des Weiblichen Ges-*

ADDITIONAL.

The preceding chapter is a brief one. The following propositions may perhaps serve as useful themes for meditations connected with it.

1. Fichte expresses himself as Weiss did, "*Orations to the German Nation*," (*Reden an die Deutsche Nation*,) Leipzig, 1824, p. 52.

"Even although this mental action is not that from which good morals proceed, and though, to this end, a special direction of that action is necessary, still this love is the universal condition and form of the moral will; and accordingly this species of intellectual training is the immediate preparation for moral training."

2. A good teacher must always maintain his discipline with a strong hand; although it is a secondary object, and not a primary one. The only primary object is instruction. Discipline is the outward strength of armies; learning is the strength of the scholar.

3. Discipline is an adjustment from without; cultivation, from within. Nor is discipline civilization. Neither discipline nor any particular degree of civilization necessarily excludes a state of external barbarousness. There are barbarians who are disciplined and civilized.

4. "Instruction is divisible into two kinds; either educating or purely instructing. When the teacher instructs, confining himself strictly within his science, strictly within his objective method, this is pure

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chlechts.) Berlin, 1845. Enslin. A work which I urgently recommend to parents and teachers. P. 252:]—"I would, on the contrary, for my own daughters, (i If had them,) search the world over for a good teacher, and would rather they would remain deficient in any thing else than in this. For if I should succeed in obtaining a good instructress, in my sense of the term, I should also have obtained a good educator. But here also I come into open opposition to Herr Schulz. He pronounces it an error to take as synonymous the ideas of 'Art of Education' and 'Art of Instruction.' With reference to the male sex, I will express no opinion on this point, although I entertain a distinct one. But it is my conviction—and one not to be shaken—that, for girls, no distinction can be made between these, but that each is indissolubly implied in the other. This is no theory constructed by me in the air, over my writing-desk; it is the result of twenty years' practice—of an experience which can not be annihilated by the acutest discussions of the learnedest men. But what is that which is called education? I will permit Herr Schulz himself to answer. It is 'To guide and accustom young minds to the true, the noble, and the beautiful; to propriety, modesty, and elegance.' I will, for the present, accept this definition, though it is too narrow for me, and under it would inquire of my own past pupils, whether most of the advantages included under it, which they gained through me, did not proceed from the hours of instruction. I have already had oral or written testimony from many of them, that that very species of instruction which Herr Schulz thinks us (women) unfit to give, viz., religious instruction, exercised an influence upon their views and feelings, to which they principally owe whatever of good there is in them, and which is still an active and efficient principle within them. It was especially during the instruction which I gave my pupils in religion, (I called it instruction in Christian duty.) in history, mythology, natural history, &c., that I found opportunities of awakening in them, in a manner the most simple and natural, and adapted to their capacities, ideas upon the glorious destiny of man in general, and of woman in particular, upon the holiest duties of both, upon the great happiness of an existence devoted to the service of what is truly good and beautiful, upon the inestimable value of a truly childlike relation to God, upon real human greatness and virtue, upon that most difficult and rare art, of living a beautiful and noble life—in a word, upon all that concerns the true worth and happiness of man;—ideas whose germs lie slumbering within most minds, but which are often not strong enough to bring themselves to the birth, but demand a Socrates to arrest them and bring them forth into the clear light of intelligent freedom."

instruction; as in the universities, &c."—Prof. Braubach, in "*Mager's Review*," May, 1843.

I do not agree with this statement. All instruction has an educating effect; is at least intellectually educating; that is, it renders definite the thinking faculties, and gives consistency of thought, thus working indirectly upon the will. Instruction which did not do this would be a mere mass of notifications, not worthy of the name of instruction.

5. School discipline, like instruction, will take form from the qualities, especially the temperament and character of the teacher. The foremost influence should be love to the vocation and the pupil; next, and with these, comes strictness in fulfillment of duty, faithfulness in small things, and from them love of justice. On the latter point Doederlein—"*Addresses and Essays*," (*Reden und Aufsätze*,) Erlangen, 1843, p. 235—has some very true and acute remarks.

"The reputation of strict fairness and its closest expression, unconditional impartiality, is the first fundamental requisite of efficient school discipline. What I mean is, that the teacher must, from the first, be so impregnably established by his whole character in his credit and reputation, as that nothing else shall be necessary to protect him in the practice of entire justice and impartiality. He must absolutely have entire freedom to manage his pupils variously, according to their different individualities; and, both in punishing and rewarding, to follow the higher considerations and requirements of an intelligent prudence and wisdom, without being obliged to apprehend a charge of partiality. He must have reference to variety of talent and temperament, and even of condition and education; (for if two persons suffer the same thing, yet it is not the same.) But all these considerations, let it be observed, should be strictly pedagogical, not at all political; according to the commands of conscience, not the counsels of worldly wisdom."

6. The school is essentially an educational institution; it educates by means of instruction; that is, not merely by communicating knowledge, but by the exercise of the faculties on the material which is the subject of instruction, and the various arrangements which the success of the instruction require. Any one violating these latter, or not applying his individual faculties to the best of his ability, is deserving of punishment. Under this statement come all school delinquencies, (crimes not being here referred to,) including moral ones, such as lying. The schoolboy lies, usually, to escape from the punishment of some neglect of work, forgetfulness, &c.; to lie in order to bring a punishment upon his comrade is—to the honor of human nature in boys—a thing unheard of. But, on the other hand, the number of cases where he lies in order to preserve his comrade from punishment is legion.

All delinquencies and punishments in school can thus be brought into connection with instruction and its requisites.

Or they may be considered apart; as moral delinquencies.

Either view is correct; neither excludes the other. The educator will prefer the latter; but most parents, the former, especially the less judicious. The measures pursued may, in the former case, be referred to the biblical admonition, "Let all things be done decently and in order;" in the latter, to the text, "Train up your children in the nurture and admonition of the Lord."

7. All school punishments are pedagogical; that is, they are intended to improve the child. Theories of deterring, or of retaliation, are quite inadmissible; as is that of any expiation to an offended God. God can not be offended. Men must put themselves on the right terms with him, and with his own conscience, by sorrow and improvement.

That the more strictly religionist (*sogenannte strenggläubige*) or orthodox and pietist teachers find themselves obliged to use a stricter disciplinary practice is a fact. The main reason of this is, the erroneous assumption that God's majesty is offended by every wrong action. No such view ought to be expressed, even in the penal codes. Whether such is the case, must be left to the higher and invisible Judge. Man has no voice in that decision, nor consequently should he have in inflicting a punishment for it. This same class of teachers often, by reason of the same doctrine, see faults and sins where others do not. It is in this case as with the ghost-seers. He who believes he sees them does see them. But the worst thing is when they look upon the child as a reprobate or a criminal. And yet this is seldom a correct opinion, even of such adults as are punished for crimes. "The more we examine men and their errors, the more occasion we shall find to treat them, not as hardened devils, but rather as poor tempted creatures."[*]

8. "Much speaking is a weariness to the flesh." Many laws, many transgressions. It is enough to frighten one, to read all the rules which are given to teachers. See, for instance, the little work, "*Discipline in the Common School,*" (*Die Zucht in der Volksschule,*) by Raimund Hermanuz, director of the Catholic Teachers' Seminary at Ettlingen, in the Grand-duchy of Baden. Carlsruhe and Freiburg, 1843. Herder, pp. 48. Catholic clergymen are fond of admonishing and moralizing. In this work we find it advised to make use of tablets of rules, places of honor, golden-books, &c. All pure supererogation! Otherwise, the book contains many good observations. But he must be a poor teacher who needs this army of advice. And *quere*, can such a master in laws and rules ever educate so as to make apt and ready pupils? Such things would leave us to the conclusion that it is better to go back to the old fashion, and find in hard blows one universal means against all kinds of school delinquencies. Lied? the rod. Lazy? the rod. Struck somebody? the rod; &c., &c. *Toujours perdrix!*

9. The Gregorius Strike-hards, in their day, used, "as their daily apparatus for school discipline, a surly countenance, a thundering voice, a litany of terms of abuse, a hard fist, and a tough hazel stick. See Schlez's "*Gregorius Strike-hard,*" &c., (*Gregorius Schlaghart, &c.*) Nuremberg, 1813. 3d ed., p. 128.

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[*] *The Prussian Outline of a New Code. and its Relations to the Rhine Country,"* (*Der preussische Entwurf einer neuen Gesetzgebung und* ein Verhalten zum Rheinlande.) By Gottfried Duden. Bonn, 1843. Weber. 62 pages.

The eleventh and twelfth chapters of this book, (which are the best of the whole,) are still to be recommended to many passionate teachers. "Opposites illustrate each other."

10. It is proper here to refer to a new work, in which this subject is discussed in an able manner; viz., "*School Discipline. Systematized in a simple plan as a scientifically arranged department of knowledge; and briefly and generally discussed from the moral point of view, with direct reference to the practical needs of the teacher,*" (*Die Schuldisziplin. Als wissenschaftlich geordnete Kunde in ein einfaches System; zusammengefasst und aus sittlichem Gesichtspunkten für die unmittelbare Schulamtspraxis kurz und übersichtlich dargestellt.*) By K. F. Schnell. Berlin, 1850. Wiegand. 123 pages.

II. PLAN OF INSTRUCTION IN A SCHOOL.*

The plan of instruction (*Unterrichtsplan oder Lehrplan*) of a school includes: designation of the matter to be studied; its division into the different grades and classes; fixing the time to be devoted to it each year, week, day, hour, &c. The scheme for the latter is the lesson-bill, (*Lektions-und Stunden-plan,*) and is a subordinate part of the general plan of instruction. The plan of instruction sometimes contains more, sometimes less. It may omit any reference to method, which may be left to individual teachers; or it may confine itself to general indications, or may extend to more detailed directions; may prescribe the text-books and class-books in each study, &c. It should include, if not a scheme of directions for studying, (*Lernplan,*) at least one for working (*Arbeitsplan;*) that is, such directions that, though the pupil may learn in the course of instruction in each separate study how to do his work in it, each teacher for himself, and all the teachers of an institution containing several, shall be informed what and how much is to be given to the pupils of each age and each class for memorizing, preparation, and repetition, orally or in writing; what is the maximum of time which each teacher may require to be devoted to his department on any given days, &c. There is no need of mentioning minimums, at least in our day; for our present teachers are inclined, not to exact too little from their pupils, but too much.

We add a few details, as briefly as possible, on the chief points relating to a plan of instruction, and their principles.

1. In drawing a plan of instruction for some particular school (for there can be no universal one, nor even a general one for all of a certain class of schools, or none except such as are confined to entirely general principles,) the first consideration is to select the studies. These are determined by the class of the school (whether elementary, common, classical, &c.,) and its purpose. This is the first thing to determine.

After determining upon the studies, the next thing is, to lay out the extent to which each of them shall be pursued, and the apportionment of them to each class, by half-years, or (which is better) by years. The best courses are arranged by years. The whole extent of what is to be learned by one class, that is within one year, is the year's task for the class, and must be mastered, in order to proceeding into the next class. It will not be found well to carry the specification down to weekly tasks; it will better for the teacher, during each week, to have regard to the task for the year. It will naturally require some years' experience to be able to apportion the weekly work accurately in this way. The individual character of the teacher will also modify the distribution. One will be unable to accomplish what will be mere sport to the other. But on this point personal convenience must be subordinate to the requirements of the study, and not *vice versa.* We can not, however, in this place, discuss the subject of personal peculiarities.

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* The plan of instruction is the most important part of the school ordinance or school regulations; which last include the determination of all matters relating to the school, as grade of institution. authorities and teachers, situation, fees, vacation, &c. But, as these are adjusted by local regulations, and usually by the authorities themselves, we shall here confine *ourselves merely* to the plan of instruction, with which the teacher is concerned.

2. The subdivision of the material of each study among the various classes and years is called the course of study (*Lehrgang.*)

The governing rule in this particular is the furthest proposed point of attainment in the school, which is decided by its object as a school.

The distribution of the material to be studied among the various classes proceeds backward from this point, having reference of course to the age of the pupils, and being such that the highest class will reach the proposed furthest point. Subject to this object, the distribution will be adjusted to the contents of each study, in the first instance without reference to any other studies to be pursued by the class during the same time. Only when the extent of the various studies to be pursued by each class has been fixed can their various scopes be compared, and the estimate made whether their total exceeds the capacity of the pupils. The distributions of the various studies thus first made was a provisory one; and the final one can only be made at this point. Further actual experiment will bring any necessary modifications. These will be made, in part, as teachers, books, &c., are changed. Every plan of instruction is, therefore, a provisory one. In this world every thing is temporary. We are all provisory persons, ourselves, and so are all our institutions and works, without any exception. Whether that which is appropriate to-day will be so to-morrow will appear when to-morrow comes. Nothing can claim that it will be appropriate to-morrow merely because it is so to-day. Its suitableness for the morrow must decide for it; nothing else. The dead have no right to legislate for the living. "Only the living have rights."

The following general principles may be stated, for the selection and arrangement of the materials of a study.

a. The most important points should be made most prominent; those less so may follow after.

b. If the time and capacity of the pupils and teachers are sufficient only for the former, then the latter, the less important points, may be omitted, or made entirely subordinate and considered along with the others. The studies, for instance, absolutely indispensable in every common school, even the smallest, are Religion, Reading, Writing, Arithmetic, and Singing. Those not absolutely necessary are all others; such as real studies, called also studies in useful knowledge, knowledge of forms, drawing, &c. The useful-knowledge studies may, if necessary, be connected with reading, and studies out of the reading-book.

c. Whatever is presupposed in a subsequent study must have been learned in a former one.

d. Related subjects must be attended to at the same time. (See the didactic principles above laid down.)

e. In each successive grade, the powers of the pupil must be exerted, not upon many subjects, but upon few. In a higher school, for instance, two languages should not be commenced at the same time. The successive method should also be used; or rather a successive arrangement.

In arranging the course of a single study, the most important point is the arrangement of materials. As (merely for illustration) in Arithmetic, 1st, numbers from 1 to 10; 2d, from 10 to 100, &c.: in Geography, A, preparatory course—home geography; B, geography proper—including, 1st, mathematical geography, 2d, physical geography, 3d, political—as, *a*, of Europe, *b*, of Africa, &c.

The second point in a special course of study is the presentation or management of the materials, either scientific or didactic. The former considers the subject in a purely objective manner, the latter has reference at the same time to the needs or nature of the pupil who is to study; whether he is an elementary pupil, a gymnasiast, &c. Here, also, the method followed makes its appearance: whether analytic, proceeding from a whole to parts; synthetic, from parts to a whole; or genetic, deducing one thing from another. Thus, instruction in language may proceed from sentences down to single sounds (analytic;) or from sounds up to sentences (synthetic;) or by the production of finished and compound sentences from simple ones (genetic.)

On these principles the subjects of study may be distributed according to the different classes of the schools.

3. As to division into classes, and distribution of studies among teachers, the following principles may be laid down:—

a. The younger the pupils the fewer the teachers; and only one where possible.

b. Always one principal teacher, or class-ordinary, for one class, with a principal study; who is to maintain a unity of action in order, discipline, &c.

c. A class system should prevail in every common school, rather than a system by departments of study (*Fachsystem.*)

d. The principal of the school (rector, director) should conduct some lessons in each class.

e. The most skillful teachers should be employed in the lowest classes, and the next most skillful in the highest.

f. A less skillful teacher should be employed in the department he understands best, in several classes.

g. No one should have an exclusive privilege of teaching in one class. The good of the school must be considered before private preferences.

4. With respect to time the following principles may be stated:—

a. Studies and classes should, from time to time, be redistributed in various ways among the teachers. Variety is refreshing.

b. The greatest number of hours should be devoted, not to that study which is in itself most important, but to those which require most time to master them. For example: religious instruction is more important than all other instruction; but it does not follow that a greater number of hours should be devoted to it. The influence of religious instruction is not proportioned to the number of hours devoted to it. Every true teacher is a religious teacher. Religion is not an isolated thing, disconnected from others.

c. Studies requiring most concentration and intense action of the mind from teachers and pupils should be taken up in the first part of the forenoon; though, at the same time, regard must be paid to a proper interchange of subjects.

d. A parallelism between the first and second halves of the week is well enough, but not absolutely necessary.

e. The lesson-bill of a school of one class, with one teacher, will of course differ from one for a school with several separate classes. In the former case, such studies must be entered for each hour as permit the teacher to instruct in one study with one portion of the pupils, while the rest are at work by themselves, or with the help of an assistant. In the latter, a great variety of arrangements are possible, a selection from among which will depend upon the judgment and experience of the teacher of each individual school. There can be no universal rule of proceeding for all cases.

"Yourself is the man;" "Demonstration is better than study." That is, it may be better (for instance) that one division of the school should occupy all of half a given time than that two divisions should together occupy twice as much. Circumstances are frequently decisively powerful, and not to be overcome. In many situations the question must be, not what could be done if the case were so and so, but what can be done under circumstances as they are, which can not be modified? Instruction is necessary, and profitable; but there are also other necessary things. The teacher should not be a weak, still less a narrow-minded, man; who can see nothing except his pupils, and who thinks that the salvation of the world is depending on his efforts, and the salvation of his pupils on their attendance at school.

5. The plan for working (*Arbeitsplan*) should define for each day of a year how much time the pupil in each class shall devote to private study. It is the maximum of time, of course, as was already observed, which must be fixed for each study on each day. The principal points to be regarded in this arrangement may be gathered from the following observations.

a. Nothing should be prescribed for the sake of prescribing it, nor for the sake of keeping the pupil busy—an object which many ignorant parents desire to obtain for every hour; a point which the teacher should never concede to them—but because this method of study promotes progress, develops the pupil's self-reliance and power of independent effort, and assists him in mastering his materials. The lessons must, accordingly, be carefully selected, and must always be suited to the age and powers of the pupils.

b. The younger and less capable the pupils are, the less able are they to study by themselves at home.

c. The teacher should make the pupil master of the substance of his work, and not leave it to the latter himself; for, as a general rule, he will not be competent. Under the direction of the teacher, and with his mind fully awake, he will learn more than in ten times the same time alone, amongst the interferences or fatigue of home. The school becomes agreeable to thousands of scholars, (and hundreds of thousands of parents,) from the misery which their studies at home inflict upon them. And what is the use of studying in pain and misery? How does it rob the child of valuable time, which he ought to be using in his own sports and in the cheerful company of his parents! Therefore, all labor at home should be confined within a reasonable extent—at present within the indispensable minimum; for the opposite extreme, even in schools for girls (!) is the present tendency. The first question for the teacher to consider at present is, Are these hours of study at home indispensable? Can they be omitted? (God bless this reflection: posterity will thank us for it.)

4. The work for the studies at home must be previously mastered in the school.

It is not enough that a task is prescribed which is reasonable in itself. The pupils must be rendered capable of themselves attaining a perfect mastery of it. How do the poor children torment themselves if they find themselves unable to do this! Therefore, the teacher should show them how to memorize, prepare, recite, write a composition, solve a problem, &c., by going through those respective kinds of work with them. Thus the teacher becomes the true friend of his pupil; a much more efficient relation than that of master. (There are still many teachers who are not, it is true, flogging-masters, but are still prison and torture-masters. In the hands of many teachers, the catechism is a real instrument of torture.

a. The scheme or plan for working should contain directions for a whole week, and every day of it, by name—Monday, Tuesday, &c.; and with two columns for each day—"Written Exercises" and "Oral Exercises."

The principal studies of Monday should naturally be arranged with reference to the business of the Sunday; viz., rest and edification. Those of Thursday should be somewhat similar.

The oral and written exercises should have a relation to each other.

On the first day of the year's course, the plan for working should be delivered to each pupil, along with the lesson-bill, and both should be hung up in the school. Both are, of course, the result of the ripest consideration of the associated teachers. It may contain a list of the books which each pupil must procure.

Instead of further remarks, we shall add one or two examples, but still not as models; every lesson-bill and plan of working must be an individual work.

PLAN OF WORK FOR FIFTH CLASS OF A SEMINARY.

(Boys of 7 to 8 years.)

TO PREPARE AND WORK UP FOR.	IN WRITING.	No. of hours.	ORALLY.	No. of hours.	Total.
Monday.	Arithmetic.	1	From Bible history. Reading from reading-book. Learning a hymn.	½ ½ ½	2½
Tuesday.	Work in German.	1	Stanza of hymn, or some texts. Reading lesson.	½ ½	2
Wednesday.	Penmanship.	1	Reading lesson.	½	1½
Thursday.	Arithmetic.	¾	Biblical history. Reading lesson.	1 ½	2¼
Friday.	Work in German.	1	Stanza of hymn, or texts. Reading lesson.	½ ½	2
Saturday.	Penmanship.	1	Memorize from reading-book.	1	2

PLAN OF WORK FOR THIRD CLASS OF A SEMINARY.

(Boys of 10 to 11 years.)

FOR	IN WRITING.	No. of hours.	ORALLY.	No. of hours.	Total.
Monday.	Arithmetic: some problems. One drawing.	1 1	Geography: a task to learn or repeat. German: to learn a poem.	1 1	4
Tuesday.	French: translation from Schifflin. Arithmetic: problems.	¾ ¾	French: memorizing. Latin: memorizing from grammar.	¼ ¼	2
Wednesday.	French: translation from Schifflin. Latin: translation.	¾ ¼	French: memorizing. Latin: preparing a lesson. Religion: memorize a text or stanza.	¼ ½ ½	2¼
Thursday.	German: a composition.	1¼	Latin: memorize from grammar. Geography: memorize a task. German: memorize a poem.	¼ ½ ¼	2½
Friday.	French: translation from Schifflin. Arithmetic: problems.	¾ ½	French: memorizing. Latin: preparing lessons, or grammar. Religion: memorize a stanza or text.	¼ ¼ ¼	2
Saturday.	French: translation from Schifflin. Latin: translation.	¾ ¼	French: memorizing. Latin: preparing lessons.	¼ ½	1¾

6. Principles as to books and methods.

The selection of school-books is sometimes left to the teachers, and sometimes prescribed. Between these extremes, of entire freedom—which may run into arbitrariness—and the utmost definiteness, there are many different degrees. Sometimes the teachers select, subject to the approval or rejection of the officers; sometimes the plan of study designates a number among which the teachers may select, &c., &c.; among all which intermediate plans, that which is legally practiced in Prussia seems much to be preferred. In Austria the latter of the two extreme modes prevails; which secures a fixed and uniform course, one entirely stationary in respect of improvement. In the condition of the Prussian system, it is a useful arrangement for the plan of instruction to designate those books which, for the present, (until better ones appear, or others are found more suitable,) shall be used as manuals. This plan materially aids in fixing the terminations of the class courses; as the rate of progress is thus easily fixed. Thus, in Kohlrausch's Biblical History is taken, during the first year, from §1 to §25, inclusive; and so on.

It is also of great use to designate the means by which the teachers will find their labors facilitated.

As to methods, most teachers are of opinion that they should be properly and exclusively determined by the teacher; and that the plan of instruction should, in this respect, confine itself at furthest to entirely general prescriptions. The teacher, it is said, *is* the method; a good teacher with a bad method is better than a bad teacher with a good method, &c.

To these views I can not subscribe. If it is true—and who will at this day deny it?—that didactics has its laws, then these must be observed, and can be violated only to the injury of instruction. These laws were established in order to be obeyed. They are based upon investigation of human nature, and of external objects. As long as these last do not change, those laws must prevail.

And as to the comparison above cited we hardly know what to say of it. Of the four combinations,

1. Good teacher with good method;
2. Good teacher with bad method;
3. Bad teacher with good method;
4. Bad teacher with bad method;

it will easily be seen that Nos. 2 and 3 are impossible, as implying evident contradictions, and that Nos. 1 and 4 are mere tautologies. It is self-evident that a good teacher will have a good method, and a bad teacher a bad one. The method is not a garment, that can be put on and off, the man always remaining the same. It is the expression of the teacher's personality, as interpenetrated with the nature of the thing studied, and the living consciousness of the nature of the pupil; it is the objective instructing mind itself. If the idea is admitted that a bad teacher can have a good method, and *vice versa*, it is implied that the method is some external thing, which might perhaps be called a manner, but should never be called by the honorable name of a method.

Such a manner, pattern, or wooden regulation, how useful soever, will certainly never make good instruction out of bad; they do not even desire to be mentioned at all. They belong to mere manner, as do all other merely external matters, and may be in one way or another, and good in either case.

There are many teachers who pay no great attention to methods, either because they have to be arbitrary, or because they do not understand what methods are.* They have probably accustomed themselves to a particular kind of instruction, (commonly that of prelection,) and now find this very convenient, or, as they say, "practical." They say, "I find it exceedingly well adapted to me." Granted; but what does this prove for the value of their method? How do the pupils find it to agree with them? Will the object of instruction be attained? These are the questions which need to be answered. Nor would I desire to destroy that freedom which the teacher must enjoy, in reference to the development of his personal character, and the recognition of it; but this freedom must not become entirely lawless, and proceed arbitrarily, on the principle that "Such is my good pleasure." Nor can I assent to Pustkuchen's doctrine, that "The important matter is the result; not the mode in which it was produced. The former must be definitely required; the latter may be left to free choice." For the value of the results depends precisely upon the way in which they are produced. If the latter is not right, the former can not be valuable. Therefore, I claim that the plan of instruction should indicate the method to be followed in each study, in each stage of it, on the received principles of didactics. Of course pedantry is to be avoided: the old principle holds good, "In things necessary, unity; in things doubtful, liberty; in all things, charity." Therefore, there should be, in each class, fixed outlines for each study, for all teachers, whatever their varieties of character and tendency. These prescribed outlines should not be considered strait-jackets and go-carts, but only as confirmed principles; not as dogmas, but as results of all reflection and long experience, both at home and abroad, and as to be received until better shall be found. Such principles as develop themselves gradually out of the united experience of the teachers of one school, as a common opinion as to the best mode of action, form a center and rule for the efforts of all, and insure unity of aim and endeavor.

7. Lastly, there may be added to the plan of instruction some general regulations as to discipline. This department we consider, as was already stated, not at all as a separate branch of the labor or the attention of the teacher, but as strictly a constituent of instruction; and, gen-

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* "A protest has been made, on strictly supra-naturalist or rationalist and thus quite one-sided grounds, against special instruction, against a general methodology; as being that 'by which the power of each body of teachers is broken down, and their most important individualities, and the benefit arising from them, are neutralized.' But the inquiry may very properly be made, What power? what individualities? For *all* powers—the most distinct individualities—always have submitted, and always do submit, themselves, in all places and at all times, to a higher will, to universal laws, with a free obedience which makes them loftier and freer."—Kapp, p. 79.

erally speaking, only as the general conception of such externals as must be regulated in order that the attainment of the purpose of instruction may be made as certain as possible. In some points the teachers must be agreed. Therefore, the plan of instruction should define,

a. How the books shall be held; whether *ad libitum*, or on some one model, &c.

b. Before what time the pupils must be present; and after what time not admitted, &c.

c. Where they shall assemble.

d. Whether they shall salute the teacher.

e. Whether they shall rise up or not when answering a question.

f. What shall be their position on the benches.

g. Whether any use shall be made of emulation.

h. What measures shall be applied to those who do not perform their work, or not in time, or not in the right way.

i. What shall be done to those who do not complete their tasks, &c.; and as to other matters in the school, in part of a local nature.

Such matters may seem to a mere observer of little importance; they are, however, in fact, of great importance, and for want of regard to them many schools are ruined. In education, every thing is important; and the conscientious teacher will omit nothing. He will, with religious earnestness, apply himself to great things, and to apparently small ones also. Thus he will save himself a multitude of troubles and obstacles; will, by means of foresight, watchfulness, and careful supervision, escape the painful necessity of inflicting frequent punishments; and will every where appear as the loving, careful, and intelligent father of his pupils. He will look for the essence of things, not in laws, regulations, and rules, but within—in the soul. "Salvation comes from within." "Words are nothing; it is the spirit in which we act."

8. Literature.

1st. Plan of instruction for the common schools, with special reference to the province of Prussia. By J. F. Sluymer, (*Lehrplan für Volksschulen, mit vorzüglicher Berücksichtigung der Provinz Preussen. Ausgearbeitet von J. F. Sluymer.*) 2d ed., Königsberg, 1847. Gräfe & Unzer.

After an introduction, respecting the idea of a plan of instruction, the place of the common school, division into classes, extent of study of each class, &c., the author lays down his course of study. For each study he states, in beginning, its end; the furthest point to be attained. He then discusses the study itself; states the portions of it to be studied in the lower, middle, and higher classes; names proper works, both to be used by the pupils and by the teachers, in preparing and further cultivating themselves; and ends the section with observations on the mode of instruction, the most probable defects and errors, &c. A very useful and judicious work. He adds, at the close, some lesson-bills, with remarks on attendance, and gives a sketch of a good school.

2d. Outline of a plan of instruction for common schools, (*Entwurf eines*

Unterrichtsplanes für Volksschulen.) By R. Kirsch. Leipzig, 1840. Reclam.

Already referred to.*

3d. Brief plan of instruction for the common schools, as a guide to the surer attainment of their objects. By several educators, and edited, with an appendix in school discipline, by A. M. Claussen. (*Kurzgefusster Lehrplan für Volksschulen als Wegweiser zur sicherern Erreichung ihres Zieles. Entworfen von etlichen Schulmännern und mit einem Anhangen über Schuldisziplin herausgegeben von A. M. Claussen.*) 2d ed., improved. Oldenburg, 1844. Stalling. Pp. 50.

4th. The Burgher Schools in Leipzig in 1842. A picture from life. (*Die Bürgerschule in Leipzig in Jahr* 1842. *Ein Bild nach dem Leben.*) By Dr. Vogel. Leipzig, Barth. Pp. 152.

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* There appeared, in 1829, at Schwelm, (Scherz publisher,) my own "*Plan of Instruction for the Elementary School at Mörs,*" (*Unterrichtsplan der Elementarschulen in Mörs*) Pp. 63. A. D.

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NORMAL SCHOOLS; and other Institutions, Agencies and Means, designed for the Professional Education of Teachers. By Henry Barnard, Superintendent of Common Schools in Connecticut. Hartford, 1851.

The above work was first published in 1847, to aid the establishment of a Normal School in Rhode Island, and afterwards circulated largely in Connecticut for the same object. It was enlarged in 1850, and published as one of a series of Essays which the author as the Superintendent of Common Schools, was authorized by the Legislature to prepare for general circulation in Connecticut, to enable the people to appreciate the importance of the State Normal School, which had been established on a temporary basis in 1849. The documents embraced in this treatise are of permanent value.

In addition to an account of the organization and course of instruction in the best Normal Schools in Europe and in this country, it embraces elaborate papers on the nature and advantages of Institutions for the professional training of teachers, by Gallaudet, Carter, Stowe Emerson, Everett, Humphrey, Mann, and others.

LEGAL PROVISION RESPECTING THE EDUCATION AND EMPLOYMENT OF CHILDREN IN FACTORIES AND MANUFACTURING ESTABLISHMENTS; with an Appendix on the Influence of Education, on the Quality and pecuniary value of labor, and its connection with Insanity and Crime. By Henry Barnard, L L. D. F. C. Brownell, Hartford. 84 pages.

This pamphlet of 84 pages, was prepared by the author in 1842, to fortify some recommendations contained in his Report as Secretary of the Board of Commissioners of Common Schools, for more thorough legislation to protect the health, morals, and souls of children from the cupidity of employers, and of parents, and at the same time to show how the productive power of the State could be augmented, and the waste of property, health and happiness, might be prevented by such an education as could and should be given in Common or Public Schools. The statistics and legislation on these subjects are of permanent and universal interest.

PRACTICAL ILLUSTRATIONS OF THE PRINCIPLES OF SCHOOL ARCHITECTURE. Third edition. By Henry Barnard. Hartford; F. C. Brownell. 1856.

This work is an abridgment by the author, of his large treatise on School Architecture, made originally for a Committee of the American Association for the Advancement of Education, and adopted as the first of the series of Essays prepared for general circulation in the state of Connecticut. An edition of 5000 copies was printed for circulation in Great Britain, at the expense of Vere Foter, Esq., of London.

CONNECTICUT COMMON SCHOOL JOURNAL; Vol. I, to Vol. VIII.

The Conn. Common School Journal was edited and published by Mr. Barnard, as Secretary of the Board of Commissioners of Common Schools, from Aug. 1838 to Aug. 1842; and as Superintendent of Common Schools in Conn., from 1850 to 1855. On the 1st of Jan. 1855, its publication was assumed by the State Teachers' Association.

TRIBUTE TO GALLAUDET.—A Discourse in Commemoration of the Life, Character, and Services of the Rev. Thomas H. Gallaudet L L. D., delivered before the citizens of Hartford, January 7th. 1852, with an Appendix. By Henry Barnard, L L. D. Philadelphia: H. Cowperthwait & Co.

The above Discourse was delivered before the citizens of Hartford, and published at their request. The Appendix contains several productions of Mr. Gallaudet, of permanent value, with a History of Institutions for Deaf-mutes,-in different countries, and particularly of the American Asylum at Hartford, by the author of the Discourse.

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PESTALOZZI AND HIS EDUCATIONAL SYSTEM.

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